Nova Scotia Public Education
Teacher Demand and Supply

Research Paper—2001 Update

NOVA SCOTIA
Department of Education

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Contents

List of Tables v

Executive Summary vii
- Background and Purpose of the Study vii
- Demand and Supply of Teachers in Other Jurisdictions vii
- Demand for Teachers in Nova Scotia vii
- New Supply of Teachers in Nova Scotia viii
- Imbalances of Demand and Supply x
- Substitute Teacher Labour Market xi
- Integrated View of Regular and Substitute Teacher Demand and Supply xii

About This Study xiii

1. Introduction 1

2. Background 3
   - 2.1 Scope of the Public Education Labour Market 3
   - 2.2 Recent Indications of Teacher Demand and Supply Issues Elsewhere in Canada and the United States 3
   - 2.3 Statistics Canada Study on Projected Supply and Demand for Teachers—Nova Scotia Results 5
   - 2.4 Influence of Private Elementary and Secondary Education in Nova Scotia 6

3. Employment Profile of Nova Scotia Teachers 7
   - 3.1 Teacher Employment Status 7
   - 3.2 Remuneration of Regular and Subsititue Teachers 9

4. Other Factors Underlying the Demand and Supply of Nova Scotia Teachers 11
   - 4.1 Changing Teacher Certification Requirements 11
   - 4.2 Teacher Recruitment Issues 13
   - 4.3 Curriculum Requirements and New Course Offerings 18
   - 4.4 Increasing Importance of Instruction in the French Language 19
   - 4.5 Trends in Student Enrolments through 2009-10 20
   - 4.6 Ratio of Students Per Teacher and Projected Teacher FTEs through 2009-10 22
   - 4.7 Teacher Pension Plan Provisions and Estimated Annual Teacher Retirements through 2009-10 23
   - 4.8 Non-Retirement Attrition of the Teacher Workforce 26

5. The Current Availability of Regular Teachers in Nova Scotia—Results of the 2001 Survey of School Boards 31
   - 5.1 Scope, Purpose, and Response Rate of Survey 31
   - 5.2 Availability of New, Qualified, Regular Teachers by Subject/Specialty Area 32
   - 5.3 Ability of the School Boards to Hire Qualified Teachers 33
   - 5.4 Changing Ability of School Boards to Attract Qualified Candidates 34
   - 5.5 Comments by Human Resource Officials 34

6. Demand for Teachers in Nova Scotia 37
6.1 Overview of the Demand Modal 37
6.2 Projected Teacher Demand by Subject/Specialty and Administration 39

7. Supply of Teachers in Nova Scotia 41
7.1 Overview of Teacher Supply 41
7.2 Long-Term Teacher Supply Outlook in Nova Scotia 44
7.3 Supply of Teachers by Subject Area 45
7.4 Potential Supply of Teachers of Non-Teaching Holders of Certification 47

8. Projected Imbalance of Teacher Demand and Supply by Subject, Specialty, and Administration 49
8.1 Measuring Projected Imbalances 49
8.2 Projected Imbalances of Secondary and Elementary Teachers 51
8.3 Projected Imbalances of Administrative and Support Services Teachers 54

9. The Substitute Teacher Labour Market in Nova Scotia—Survey of School Principals Regarding the Availability of Substitute Teachers 57
9.1 Background and Need for the Survey 57
9.2 Process for Engaging Substitute Teachers 57
9.3 Scope of the Survey of School Principals and Response Rate 57
9.4 Problems Finding Qualified Substitutes by Subject/Specialty and by School Board 59
9.5 Trend in Ability of Schools to Find Qualified Substitute Teachers 62
9.6 Reasons for a Shortage of Substitute Teachers and Other Comments 63

10. The Substitute Teacher Labour Market in Nova Scotia—Data Analysis 65
10.1 Analysis of Available Labour Market Data on Substitute Teachers 65
10.2 School Board Substitute Teacher Profile 69
10.3 Substitute Teacher Utilization and Seasonality by School Board 70
10.4 Problem of Substitute Teacher Availability 71

11. Integrated View of Regular and Substitute Teacher Demand and Supply in Nova Scotia 73

APPENDICES 77

Appendix A—Detailed Tables 79

Appendix B—Summaries of Selected Articles Regarding the Current Labour Market for Teachers in Canada and Various Provinces 87

Appendix C—Nova Scotia Teacher Demand and Supply Study School Board/District Questionnaire, June 2001 93

Appendix D—Nova Scotia Teacher Demand and Supply Study Principal Questionnaire, June 2001 95

List of Tables

1. Employment of Elementary and Secondary Public Teachers 3
2. Active Teachers by Status by Year 7
3. Teachers by School Board by Status, 2000-01 8
4. 1999-00 Status of Probationary/Permanent and Term Teachers Active in 2000-01 9
5. Regular Teacher Salaries and Substitute Per Diem 10
6. Employment of New Probationary and New Term Teachers 16
7. Enrolment in French First and Second Language Programs 20
8. Actual and Projected Public School Enrolments 21
9. Recent and Projected Student per Teacher/Administrator Ratios 22
10. Regular Teacher Occupational Mobility from Nova Scotia Public Education 27
11. Number of Leaves by Regular Teachers for at Least Part of a Year 28
12. Leaves by Type 29
13. Human Resource Survey Summary for Nova Scotia 32
14. Survey of School Board Human Resources Officials Comments 35
15. Projected Teacher Full-Time Equivalent Demand by Components for Nova Scotia 38
16. Projected Demand for Teachers in Nova Scotia by Subject/Specialty/Administration 40
17. Nova Scotia Teacher Certificates Issued by Location of Education Institution and Available Teacher Supply 41
18. Teacher Education Institutions in Nova Scotia Capacity, Graduates and Applicants 43
19. Annual New Supply of Teachers in Nova Scotia 44
20. New Supply Versus New Demand, 2001-02 to 2009-10 45
21. Academic Majors of Nova Scotia Teacher Certification Recipients 46
22. Teacher Supply and Projected Demand by Category 50
23. Secondary and Elementary Supply and Projected Demand by Subject 52
24. Administration and Student Support Services Supply and Projected Demand 54
25. List of Unfilled Positions by Board 55
26. Principals Survey Response Rate 58
27. Survey of School Principals Availability of Substitute Teachers in 2000-01: Summary Tabulation for Nova Scotia by Subject/Specialty 60
28. Survey of School Principals Availability of Substitute Teachers in 2000-01: Summary Tabulation for Nova Scotia and School Boards 61

29. Ability to Find Qualified Substitutes During Past Two Years 62
30. Nova Scotia Substitute Teacher Labour Market 66
31. Substitute FTEs Compared to Regular Teacher FTEs 66
32. Comparison of Loss of Substitute Teachers with New Supply of Teachers 67
33. Three Year Work History of Substitute Teachers in 1997-98 68
34. Substitute Teachers Profile by School Board, 2000-01 69
35. Ratio of Highest to Lowest Months of Substitute Teachers 70
36. Projected Nova Scotia Regular and Substitute Teacher Workforce (FTE) Dynamics 74

APPENDICES

1-A. Projected Enrolments by Grade Level and Estimated Teacher Full-Time Equivalents (FTEs) for Nova Scotia 79
2-A. Estimated Number of Retirements (with Pension) by School Board FTEs 80
3-A. Survey of School Board Human Resource Officials: Availability of Qualified Teachers to Fill Regular Teaching Vacancies, 2000-01—Summary Tabulation for Nova Scotia by Subject/ Speciality 81
4-A. Survey of School Board Human Resource Officials: Availability of Qualified Teachers to Fill Regular Vacancies, 2000-01—Summary Tabulation for Nova Scotia by School Board 82
5-A. Survey of School Principals: Availability of Substitute Teachers in 2000-01 83
6-A. Substitute Teacher Utilization by School Board, 2000-01 85

Executive Summary

Background and Purpose of the Study

This study updates the research paper, *Nova Scotia Public Education Teacher Demand and Supply*, of the Nova Scotia Department of Education, published in January 2000, that examined the Nova Scotia public education teacher labour market for "regular" (probationary/permanent, term) and substitute teachers, and projected teacher demand and supply to 2009-10. This *Update* highlights the significant changes that occurred in the two years since the *Research Paper* was produced, and provides a revised assessment of the issues and of the outlook for public education teacher demand and supply. The *Update* is based on the most current data relating to the Nova Scotia labour market for teachers, a survey of school board human resource officials regarding difficulties hiring qualified teachers, and a survey of school principals about the availability of qualified substitute teachers.

In 2000-01, Nova Scotia public education had 155,873 students (80,418—elementary, 27,130—junior high, 38,325—high school) and 12,121 teachers (probationary/permanent—8,700, term—1,163, substitute—2,258).

Demand and Supply of Teachers in Other Jurisdictions

This *Update* also reviews the demand and supply situation for teachers elsewhere in Canada and the United States.

Despite a continuing oversupply of teachers in Canada there is evidence of concern amongst school board and school officials that there will be increasing difficulty in finding qualified regular teachers. Further, greater attention is being paid to an apparently growing problem, at least in some regions, in hiring substitute teachers.

The United States generally has an ample supply of teachers, but there are significant shortages in certain subjects (e.g., mathematics, physics, chemistry, bilingual education, computer science, and special education) and in impoverished urban and rural regions.

Demand for Teachers in Nova Scotia

The employment of regular teachers (i.e., probationary/permanent and term), measured in full-time equivalents, in Nova Scotia public education is projected to decline by 948, or 10.0%, between school years 2000-01 and 2009-10, in response to a 16.1% decrease in student enrolments. The only segment that appears not to be declining is that of programs as a group, where French is the language of instruction, in 2000-01 having 12.5% of total enrolment.

Even though employment is declining, there is a projected net demand for 4,212 new teachers between 2001-02 and 2009-10 to partially replace regular teachers who

- retire—totalling an estimated 3,630, or 39.0% of current regular teachers
- leave public education due to occupational mobility, primarily by term teachers—estimated at 1,260, or 13.3% of current regular teachers
- disability and death—estimated at 270, or 2.8% of current regular teachers

The demand for new teachers by year is shown below. Until 2003-04, demand is suppressed due to the aftermath of the "Early Retirement Program" in 1994 to 1998, which advanced the retirement of teachers who would otherwise retire in this period.

Demand for Teachers

2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
260	275	401	493	528	609	575	564	506

New Supply of Teachers in Nova Scotia

The new supply of teachers (i.e., qualified new entrants in Nova Scotia public education who are likely to seek teaching positions in the province), is estimated to average 520 per year through 2009-10. Annual supply consists of 300 Nova Scotians graduating from teacher education programs in the province, and approximately 220 teachers, mostly from Nova Scotia, trained in other jurisdictions. Although there are about 350 graduates per year from Nova Scotia teacher education programs, this analysis assumes that graduates with an out-of-province address will not teach in Nova Scotia, and therefore are not included in the new supply numbers.

The supply of teachers from Nova Scotia teacher education programs has been reduced in recent years due to a provincially mandated reorganization, initiated in 1994, that placed a limit of 420 on the annual number of teacher graduates. English instruction programs are fully subscribed, graduating 350 in the year 2001, but the French instruction program is operating at a quarter of its authorization of 85, graduating only 21 in 2001. Reorganization also upgraded teacher education programs, now taking two years to complete instead of one, with the result that fewer non-Nova Scotians are currently enrolled in Nova Scotia teacher education programs. Given the capacity constraint, the longer programs have effectively increased the number of graduates who are most likely to seek employment in Nova Scotia.

Assuming that the new supply of teachers can be effectively utilized in the future, then a supply of 520 teachers per year would be sufficient to meet projected demand until 2004-05. There would be a shortage of up to 89 teachers per year in 2005-06 through 2008-09, and the supply should be adequate in 2009-10.

School boards in Nova Scotia report increasing difficulty hiring qualified teachers to meet their specific needs. In many instances, the subjects in demand by Nova Scotia school boards are the same as those being the most intensely recruited by school boards from other jurisdictions. The subjects that are most difficult for Nova Scotia school boards to recruit are mathematics, other sciences, physical education, fine arts, technology education, family studies, secondary other subjects, special education resource, special education other, and elementary other. In addition, school boards indicated significant difficulty finding qualified teachers for French first and second languages.

When recruiting teachers from Nova Scotia teacher education programs, the seven school boards in Nova Scotia are at a disadvantage compared to boards from other provinces and the United States:

- School boards often cannot make offers to new teachers until August, or later, for the school year starting in September due to a compounding of delays involving
  - uncertainty of funding until the provincial budget is approved in April or May, sometimes later
  - time needed for regional and province-wide placement of permanent teachers whose positions are eliminated from lack of funding
  - time needed for school board internal competitions to fill teaching vacancies by existing teachers
- School boards are currently offering new teachers mostly term positions that are vulnerable to not being renewed, and therefore, are less attractive than permanent positions offered by school boards from other jurisdictions. Of the 373 new regular teachers who were hired in 2000-01, only 30 were probationary and the remainder were term. School boards are not in a position to offer many permanent positions to new teachers because of the lower number of regular teachers retiring, continuing reductions in the number of funded teaching positions, a desire of school boards to provide available permanent positions to existing long-time term teachers, and a nominal number of permanent positions bound to teachers on disability pension.

The majority of the supply of new teachers in Nova Scotia are able to find work only as substitute teachers, who have a very high attrition rate from Nova Scotia public education. On average, over the previous six years, attrition of substitute teachers was comparable to 90% of the new supply. A major factor in new teachers not being able to obtain regular positions has been, and continues to be, that many new teachers do not have the appropriate undergraduate major or minor fields of study to qualify them to teach the subjects needed.

Imbalances of Demand and Supply

If the current pattern of new supply of teachers by undergraduate major (and minor) continues, there will continue to be **significant imbalances** between demand and supply for teachers in the following junior high and high school subjects:

Outlook for Significant Junior and Senior High School Teacher Imbalances

Subject	Annual Supply	Annual Demand 2001-02 through 2004-05	Annual Demand 2005-06 through 2009-10
Oversupply:			
English	80	22	36
Social Studies	90	17	26
Biology	41	3	5
Shortage:			
Mathematics	10	18	30
Technology Education	4	10	11

Because of the small numbers of new supply and demand, there is a risk of future "thin market" shortages of teachers in the junior and senior high school subjects of physics, chemistry, general and other science, fine arts, and family studies.

The outlook for elementary grade teachers is for an annual new supply of 218, which will result in an average annual surplus of 69 in 2001-02 through 2004-05, but an average annual shortage of 16 in 2005-06 through 2009-10.

Among student support services, there will be a substantial shortage of Special Education/Resource Teachers. Also, there is an existing shortage of Speech Therapists and Testing Services teachers; these are thin market segments and supply may not catch up to demand.

A separate analysis was not possible for imbalances of teachers who speak French in order to deliver their subject. Enrolments and the need for teachers where French is the language of instruction is growing, but recruiting teachers who are qualified in their respective subjects is made more difficult by the additional requirement that they also be fluent in French.

Substitute Teacher Labour Market

School principals in all regions of Nova Scotia note an increasing difficulty finding qualified substitute teachers. Province wide, nearly 42% of the schools reported that they often cannot find qualified substitute teachers for their subjects in 2000-01. This problem is worse in rural and isolated regions where it is frequently too costly for substitute teachers to travel to the schools.

The requirement for substitute teachers is seasonal, 50% higher in May than September. It is especially difficult to find enough qualified teachers at times of system-wide professional development days while school is in session.

In 2000-01, substitute teacher input to Nova Scotia public education totaled 695 teacher full-time equivalents. This figure has been climbing slowly over the years; in 1994-95, it was 550 full-time equivalents.

In 2000-01, there were 2,258 active substitute teachers in Nova Scotia. This number has been essentially unchanged for the previous 6 years. On average, substitute teachers taught 60 days in 2000-01. Their income from substitute teaching, based on a per diem salary of $114 to $140 per day, would average $6,840 per year, which is inadequate by itself to sustain a minimal standard of living.

The probability of substitute teachers becoming regular teachers is low. For example, of the substitute teachers active in 1998-99, by 2000-01 only 6.9% had obtained probationary/permanent positions and 16.4% had obtained term positions.

Between 1999-00 and 2000-01, the substitute teacher attrition rate from Nova Scotia public education was 27% (636 individuals), which is in-line with previous years. The primary reasons for attrition are low earnings from substitute teaching and limited prospects for regular teacher employment.

Integrated View of Regular and Substitute Teacher Demand and Supply

The linkage between regular and substitute teacher workforce components is that many new teachers start their careers as substitutes with the intention and incentive of becoming full-time teachers.

Efficient functioning of both the regular and substitute teacher labor market components will rely on policy changes that

- allow school boards to be more effective recruiters of new teachers
- align the major/minor undergraduate fields of study of new teachers with the subject profile of teachers demanded
- provide a way for substitute teachers to increase their earnings by being utilized more effectively

The outlook of a model integrating the dynamics of the regular and substitute teacher workforces suggests that the size of the effective substitute teacher pool will decline from 2,238 in 2002-03 to 824 in 2009-10. This would not likely be sufficient to meet the demand for substitute teachers in peak periods, and would not be adequate to cover a 10% absentee rate of regular teachers. Under these conditions, an increase in the supply of teachers by targeted growth of teacher education programs in Nova Scotia would be warranted. The increase, however, should not be so large that it triggers an increase in attrition, which would be counterproductive.

About This Study

The following report was prepared by the Corporate Policy Branch of the Nova Scotia Department of Education with the assistance of a consultant, Andrew Cornwall, an experienced labour market economist, who organized the study, undertook research, and drafted the report.

The study draws upon the information and analytical resources of the Corporate Policy Branch. The Research and Statistics Section provided detailed information on school enrolments, teacher certifications, and teacher status and work profiles. Primary information on teacher retirement eligibility was provided by the Pension Services Group of the Nova Scotia Department of Finance, which also advised on its tabulation for this study. Survey information was obtained by the Corporate Policy Branch from school boards and schools in Nova Scotia. Other officials of the Department of Education were consulted regarding specific topics. In addition, the Education Consultative Forum Sub-Committee on Teacher Demand and Supply, comprising representatives of Nova Scotia school boards, Nova Scotia Teacher's Union (NSTU), Nova Scotia School Boards Association (NSSBA), and teacher education programs, provided comments and insights to the study and reviewed a preliminary draft of the report.

1. Introduction

This study updates the research paper, *Nova Scotia Public Education Teacher Demand and Supply*, of the Nova Scotia Department of Education, which was published in January 2000. The *Research Paper* examined the underlying factors and trends in the Nova Scotia public education teacher labour market for regular (probationary, permanent, term) and substitute teachers. The paper also projected teacher demand and new supply to 2009-10 in order to determine the prospect of oversupply or shortage in general, as well as by subject/specialty area.

This *Update* highlights the significant changes that have occurred in the two years since the *Research Paper* was produced, and provides a revised assessment of the issues and of the outlook for public education teacher supply and demand to 2009-10. Further, for this *Update*, the human resources officials of the province's seven school boards were surveyed regarding the degree of difficulty encountered during 2000-01 in attracting qualified teachers, and school principals were surveyed about their school's ability to find qualified substitute teachers.

Statistics in this report on the number of teachers, their certification and their activity were produced by the CEDAR database system of the Department of Education. The latest full year of information is for the 2000-01 school year. This information does not reflect the reorganization of the Southwest Regional School Board into the Tri-County District School Board and the South Shore District School Board. Therefore, the information and analyses below consider the Southwest Regional School Board as a whole. Data on teacher pensions were provided by the Pension Services Group of the Nova Scotia Department of Finance, and were processed for this *Update* jointly with the Department of Education.

This *Update* is organized into eleven sections:

Section 1: Introduction

Section 2: Background information about the scope of the labour market for public education teachers, including a brief examination of teacher labour market conditions elsewhere in Canada and in the United States. Also part of the background is a summary review of a recent study sponsored by Statistics Canada with reference to the outlook for teacher supply and demand in Nova Scotia.

Section 3:	An employment profile of Nova Scotia teachers.
Section 4:	An examination of various factors underlying the demand and supply of Nova Scotia teachers.
Section 5:	A summary of the results of the survey of school board human resources officials about their ability to fill regular teaching positions in 2000-01.
Section 6:	The demand projections for teachers in Nova Scotia, in aggregate and by subject/specialty, through the 2009-10 school year.
Section 7:	The outlook for the supply of teachers is in section seven.
Section 8:	An analysis of the outlook for annual imbalances of demand and new supply of teachers by subject/specialty through 2009-10.
Section 9:	A description of the results of the survey of Nova Scotia school principals regarding the availability of qualified substitute teachers in 2000-01.
Section 10:	An analysis of the substitute teacher labour market.
Section 11:	An integrated view of teacher aggregate demand and supply in Nova Scotia, that combines the linkages and dynamics between the regular teacher and substitute teacher components.
Appendices:	Detailed tables, a summary of recent reports, and articles relating to teacher demand and supply elsewhere in Canada and the United States, and survey documentation.

2. Background

2.1 Scope of the Public Education Labour Market

Public education is one of the largest employers in Nova Scotia, with approximately 18,000 workers, comprising more than 4% of the employed workforce. Teachers constitute the majority of the employees in public education. Nova Scotia participates in a North American labour market for public education professionals. The magnitude and five-year trend in overall public education teacher employment for Nova Scotia, Canada, and the United States is shown below:

Table 1

Employment of Elementary and Secondary Public Teachers

	Employment	5-Year % Change
Nova Scotia (a)		
1994-95	9,931	
1999-00	9,926	- 0.05%
Canada (a)		
1994-95	323,619	
1999-00	326,939	+1.03%
United States (b)		
1995	2,598,000	
2000	2,850,000	+9.70%

(a) Interprovincial Education Statistics Project
(b) U.S. Department of Education

2.2 Recent Indications of Teacher Demand and Supply Issues Elsewhere in Canada and the United States

Reflecting Nova Scotia's participation in the wider, North American labour market for teachers, the *Research Paper* examined reports and articles, from 1997 onward, dealing with teacher demand and supply issues in other provinces and the United States. For the purposes of this *Update* the Department of Education compiled more than 30 recent reports and articles referring to current teacher labour market issues in Canada and the United States.

A review of the recent material relating to the United States leads to the conclusion that the fundamental situation there has not changed since 1999. At present, the United States generally has an ample supply of teachers, but there are significant shortages in certain subjects (e.g., mathematics, physics, chemistry, bilingual education,

computer science, and special education) and in impoverished urban and rural regions. Some growth in the future demand for teachers is expected due to increasing student enrolments, a growing number of teacher retirements (accelerated by early retirement programs), and the attrition of teachers to opportunities in other occupations. Despite shortages in certain subjects and locations, the capacity of the United States to produce teachers is more than adequate to meet its anticipated demand.

The impression for Canada in 1999 was of an oversupply of teachers generally, but in some instances there was a shortage in certain subjects (e.g., French as a second language, mathematics, and sciences) and in remote regions. In response to oversupply and the prospect of decreasing demand for teachers due to lower school enrolments, a number of provinces had instituted early retirement programs to provide younger, new teachers with a better opportunity for employment. In Ontario, a shortage of substitute and term teachers, however, was reported. Concern was often expressed that about one-half of Canada's teachers were scheduled to retire within a decade, possibly causing a shortage in future years.

The review of current articles suggests that the situation in Canada has not fundamentally changed. There is evidence of concern, however, amongst school board and school officials that there has been, and will be, increasing difficulty in hiring qualified regular teachers. Further, greater attention is being paid to an apparently growing problem, at least in some regions, in hiring substitute teachers. (The paradox of the substitute teacher labour market is that the greater the supply, the less work that is available to each individual substitute teacher on average, and the greater incentive for substitute teachers to leave the profession.) Several articles are summarized in Appendix B of this *Update* that characterize the current labour market for teachers in Canada and various provinces. These articles were selected because they refer to recent and anticipated teacher labour market conditions, and they contain analytical research.

2.3 Statistics Canada Study on Projected Supply and Demand for Teachers—Nova Scotia Results

In 2001, Ginette Gervais and Isabelle Thony, at the Statistics Canada Centre for Education Statistics, Elementary Section, produced a study on *Determining Future Supply and Demand for Teachers*. The study projected the demand and supply for teachers to 2009-10 respectively in Ontario, British Columbia, and Nova Scotia. A shortage of teachers was predicted for the three provinces. These results for Nova Scotia differed from the outlook presented in the *Research Paper* of the Nova Scotia Department of Education, which foresaw a more balanced labour market over the forecast period. In part, the differences in the two studies of Nova Scotia differed in the models used to portray demand and supply. The Statistics Canada model of demand considered only the combined effects of variations in enrolment on the need for teachers and the replacement teachers who retire. The *Research Paper* also included the demand factors of attrition caused by occupational mobility, disability, and death. Regarding supply, the Statistics Canada model focussed on a percentage of graduates from teacher education programs in the province plus the net flow of international migrants with the stated occupation of teacher. The *Research Paper* more adequately accounted for the portion of graduates from teacher education programs in Nova Scotia who are residents of other provinces and do not contribute to the local supply of teachers. The most significant conceptual difference, however, was that the *Research Paper* included in supply the many Nova Scotians who obtain teacher training in other provinces and the United States. Further, the *Research Paper* was more inclusive in its treatment of the migration of experienced teachers, especially from other provinces.

Another difference in the results of the two studies was in the underlying data. Based on 1999 pension data, the Statistics Canada study predicted a greater number of retirements in the years prior to 2003. It may be that the Statistics Canada study did not recognize that the number of teachers retiring in this period would be reduced by the after-effect of an early retirement program available to Nova Scotia teachers during 1994 through 1998.

Finally, the Statistics Canada study did not include an analysis of the substitute teacher labour market. The substitute teacher labour market has its own dynamics that affect the demand and supply for regular teachers. As noted in the *Research Paper*, the significant number of substitute teachers in Nova Scotia provided a reservoir from which regular teachers could be supplied.

2.4 Influence of Private Elementary and Secondary Education in Nova Scotia

Private elementary and secondary education activity has not been a significant labour market factor for teachers in Nova Scotia. Private schools compete with public education for qualified teachers (although private school teachers do not need provincial certification). At the same time, the diversion of students to private schools reduces the demand for public education teachers. In 2000-01, there were 2,997 elementary and secondary school students attending private schools in Nova Scotia, representing 1.8% of the public education student population.

The proportion of elementary and secondary school students attending private schools in Nova Scotia is small. This *Update* does not include consideration of the influence of private sector elementary and secondary schools.

3. Employment Profile of Nova Scotia Teachers

3.1 Teacher Employment Status

Generally, the data in this *Update* includes all **active** teachers employed by the school boards who are covered under the *Teachers' Provincial Agreement* between the NSTU and the Nova Scotia Government. The Agreement covers teachers with classroom and administrative assignments; many administrators have both. Regardless of the nature of their assignment, teachers are required to be certified by the Department of Education. An "active" teacher is one who works for any school board in the province at least one day in a given school year.

As in the *Research Paper*, the following classifications of public education teachers are used in this *Update*:

- **Permanent Teachers** are regular employees of the school boards, and are protected for job security by rights set forth in the *Teachers' Provincial Agreement*.
- **Probationary Teachers** are regular employees of the school boards who are serving a two-year probationary period before becoming permanent teachers.
- **Term Teachers** are hired by the school boards for fixed, specific durations.
- **Substitute Teachers** are engaged by the school boards for short-term, often daily, assignments to fill in for absences of "regular" teachers, caused by short-term illness, other personal short-term leave, and professional development days. The number of substitute teachers overstates their labour input contribution to the education process, because, as of 2000-01, substitutes teach an average of only 60 days during the 195-day school year.

The number of active teachers by status in Nova Scotia for the 1998-99 through the 2000-01 school years is shown below.

Table 2

Active Teachers by Status by Year

Status	1998-99	1999-00	2000-01
Probationary/Permanent	8,916	8,853	8,700
Term	1,135	1,187	1,163
Substitute	2,195	2,324	2,258
Total	12,246	12,364	12,121

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

Employment of teachers by status for each school board in 2000-01 is shown in Table 3.

Table 3

Teachers by School Board by Status, 2000-01

	Teacher Status *				
School Board	**Permanent**	**Probationary**	**Term**	**Substitute**	**Total**
Cape Breton-Victoria	1,263	55	70	347	1,735
Strait	626	2	47	203	878
Chignecto-Central	1,380	13	280	381	2,054
Halifax	3,152	44	399	790	4,385
Annapolis Valley	879	11	177	314	1,381
Southwest	974	35	142	275	1,426
Acadian provincial	263	13	50	112	438
Nova Scotia**	8,527	173	1,163	2,258	12,121

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education
** Excludes teachers on full-year leave.*
*** Total of teachers for school boards may be greater than the number for Nova Scotia because teachers may work for more than one school board in a year.*

Often permanent teachers enter the profession as substitutes. In some cases new teachers fill term teacher positions before attaining a probationary/permanent status. The transition pattern between 1999-00 to 2000-01 for teachers active in 2000-01 is shown below. There was only a small number of opportunities for substitute teachers to attain probationary/permanent, or even term, employment status. Of the 8,700 probationary/permanent teaching positions in 2000-01, only 4 were filled by teachers who had taught in the previous year as substitutes; 120 (1.4%) were filled by formerly term teachers. Of the 1,163 term teaching positions in 2000-01, 261 (22.4%) were filled by former substitutes.

Table 4

1999-00 Status of Probationary/Permanent and Term Teachers Active in 2000-01

	Of Those Who Taught in 1999-00, Teaching Status in 2000-01		
Teaching Status in 1999-00	**Probationary/ Permanent**	**Term**	**Substitute**
Probationary/Permanent	8,320	25	29
Term	120	795	134
Substitute	4	261	1,423
On-Leave	232	0	3
On-Loan	20	0	0
New in 2000-01	*4*	*82*	*769*
Total	8,700	1,163	2,258

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

In 2000-01, there were only 124 probationary/permanent teachers who in the previous year were either term teachers or substitutes. Four new probationary/permanent teachers did not teach in 1999-00 (and were not on leave). These low numbers for transition to probationary/ permanent status suggest that at present there is only a tenuous career path for teachers entering the profession in Nova Scotia.

3.2 Remuneration of Regular and Subsititue Teachers

Remuneration of teachers is governed by the *Teachers' Provincial Agreement*, which specifies an annual salary for permanent, probationary, and term teachers, and a per diem payment for substitute teachers. As a group, permanent, probationary, and term teachers are referred to as regular teachers in the *Teachers' Provincial Agreement*. The work year for a regular teacher is 195 days. Normally the holder of a regular initial certificate starts at TC5 and progresses up to TC8, based on advanced educational attainment. There is additional remuneration for education administrators that varies with the number of teachers supervised.

The payment of substitute teachers is determined in part by their days of consecutive employment at an assignment with a board. If a substitute teacher replaces a regular teacher for 30 consecutive days in a school year the rate of pay increases, and, if a substitute teacher replaces a regular teacher for more than 64 consecutive days, then his/ her remuneration is escalated to the regular teacher pay scale. The latter situation is referred to as "long-term substitute."

The recent history of pay ranges for regular teachers and per diems for substitutes is shown below.

Table 5

Regular Teacher Salaries and Substitute Per Diem

Date Effective	Regular Teacher Salary* TCS**	TC8	Substitute Per Diems < 30 Days	> 30 Days
Aug. 1, 1998	$30,556	$61,040	$107	$133
April 1, 1999	$31,135	$62,197	$109	$135
Nov. 1, 1999	$31,444	$62,821	$111	$137
Aug. 1, 2000	$31,788	$63,512	$113	$139
Aug. 1, 2001	$32,361	$64,655	$114	$140

** Teachers with administrative duties receive a premium according to position (e.g., principal, vice principal, department head) and the number of teachers they supervise. For example, as of August 1, 2001, a principal supervising 36 teachers would be paid $12,040 in addition to his/her teacher's salary scale.*

*** Regular teachers with a Bridging Certificate are paid at a lower, TC4, scale. As of August 1, 2001, the salary range for these teachers was $29,266 to $41,434.*

The remuneration of regular teachers compares favorably to other sectors of the Nova Scotia economy. According to Statistics Canada estimates, the aggregate weekly earnings of all employees in the province was $563.98 as of May 2001 (the most current information available). At this level, assuming a 52 week earnings period per year, the average earnings of all employees in Nova Scotia would be $29,327. In comparison, as of August 2001 a starting regular teacher would receive remuneration of 110% of the average of all employees, and the highest paid regular teachers would receive 220% of this level. A similar comparison for substitute teachers is not as clear because the number of days of work teaching is not standardized. Assuming a full teaching year of 195 days, a substitute teacher would receive a maximum of $25,636, or 87% of the all employee average. In fact, however, substitute teachers only averaged 60 days of teaching work in 2000-01, which translates into an annual income from teaching of $6,840 (or $7,620 in the unlikely event of uninterrupted substitute employment replacing the same teacher).

4. Other Factors Underlying the Demand and Supply of Nova Scotia Teachers

4.1 Changing Teacher Certification Requirements

As a prerequisite for employment in public education every teacher, regular and substitute, must be certified by the Department of Education. There have been significant recent changes to the standards for a teacher to obtain initial certification in Nova Scotia:

- As of August 2000, the minimum requirement was raised from a 30 credit-hour approved teacher education program to a 60 credit-hour approved program. The former 30 credit-hour program could be completed in one academic year while the 60 credit-hour program spans two academic years. To be approved, the content of the teacher education program must meet the Department of Education's standards. Further, specific course content has been established for the three years of undergraduate studies completed prior to admission to the teacher education program. This undergraduate component comprises 24 credit hours for entrance to programs with an elementary level teaching emphasis, and up to 66 credit hours for programs with a secondary level teaching emphasis.
- As of June 8, 2001, a Bridging Teacher's Certificate was approved to allow teachers trained in other jurisdictions who do not meet the August 2000 standards, but do meet the former requirements, to receive temporary certification. The Bridging Teacher's Certificate is valid for four years and may be renewed for up to two additional years. During the period of bridging certification, a teacher is required to take steps to meet the new requirements for an Initial Teacher's Certificate. The salary classification for a teacher with a Bridging Teacher's Certificate is the salary range of a TC4: $29,266 to $41,434.

The Bridging Teacher's Certificate was established to enable the province to meet its teacher mobility obligations in accordance with Chapter 7 of the *Agreement on Internal Trade*. The academic and professional teacher education standards of the Bridging Teacher's Certificate are standards developed by a committee of the teacher certification registrars and approved by the Council of Ministers of Education, Canada (CMEC). It was the view of the committee that this standard would allow 90% of the active teachers in Canada to qualify for certification in the other provinces and territories. The remaining 10% would not qualify for a Bridging Teacher's Certificate

without academic upgrading; indeed they hold certification in their particular jurisdiction because of grandfather clauses.

Increasingly, Nova Scotia students have been pursuing teacher education and hence teacher certification within the University of Maine system. Within that system, the University of Maine at Fort Kent and the University of Maine at Presque Isle are the institutions of choice for Nova Scotians. The University of Maine at Fort Kent has been closely monitoring the changes in teacher certification requirements in Nova Scotia and have revised both their content and teacher education programs to satisfy certification requirements both in Maine and Nova Scotia. Current graduates from Fort Kent generally qualify for an Initial Teacher's Certificate or TC5.

The University of Maine at Presque Isle has been slower to respond to the changes in Nova Scotia teacher certification. Although the university offers many teacher education programs, only the program in Elementary Education meets the requirements for a Bridging Teacher's Certificate. Graduates of other programs must complete additional approved professional courses to qualify for the Bridging Teacher's Certificate. The university is aware of this situation and is generally allowing affected students to carry extra courses so that they will qualify for a Bridging Teacher's Certificate.

Certification by Subject Field

Secondary Recognized Subject List

1. English
2. French*
3. Languages
4. Social Studies
5. Mathematics
6. Science
7. Physical Education/Health Education*
8. Health Education
9. Fine Arts*
10. Technology Education
11. Business Education
12. Family Studies

* *Subject fields endorsation are valid in both elementary and secondary schools.*

An Initial Teacher's Certificate issued on or after August 1, 2005, will have an endorsation establishing fields of competency for teaching certain levels and or subject/specialty areas. For the first year of teaching employment the holder of an Initial Teacher's Certificate will be employed to teach predominately in his/her subject fields of endorsation. The Initial Teacher's Certificate will have endorsation for elementary education, secondary education by recognized subject field, and both elementary and secondary education where the secondary education subject fields are French, physical education/health education, or fine arts. The recognized secondary subject fields are shown in the text box to the left.

Endorsation will be granted according to a teacher's undergraduate studies in a discipline within a recognized subject field. A major endorsation requires 30 credit hours of study, and a minor endorsation requires 18 credit hours of study in a discipline plus subject field teaching methodology. Either a major or minor endorsation is sufficient to teach a subject field. A teacher may be granted multiple endorsations.

Specialist/Restricted Certificates

The province issues a small number of specialist or restricted certificates annually. These certificates, in the fields of testing services, social services related to education and school library services, are granted to individuals who do not otherwise qualify for certification but who have the necessary specialized training to provide these services.

Teacher Permits

The teacher certification regulations provide for the issuance of a permit to teach in those situations where a school board certifies that no holder of a teacher's certificate is available for a teaching position. This matter is regulated by provisions within the *Teachers' Provincial Agreement*. The issuance of permits to teach has become a necessity within the Acadien provincial in order to address their substitute teacher needs. Permits are recommended by the regional education officer of the Department of Education, and the NSTU is informed whenever a permit is issued. The other school boards rarely require the issuance of a permit.

4.2 Teacher Recruitment Issues

The supply of teachers, estimated in Section 7, is the number of new entrants into the Nova Scotia public education labour force who are qualified and would likely seek teaching positions with school boards in the province. The majority of the supply are new graduates from teacher education programs in Nova Scotia. It is critical, therefore, that school boards be successful in engaging new teachers from this source of supply. They may be hampered in this regard, however, by their inability to recruit new teachers in a timely manner and to offer them probationary/permanent positions. (Note, the probationary period is two years of teaching after which permanent status is usually conferred.)

School boards from outside of Nova Scotia aggressively recruit new graduates from Nova Scotia teacher education programs in the winter and spring, and are often able to make an offer of employment to new teachers several months earlier than are school boards in Nova Scotia. Moreover, school boards from other jurisdictions are able to offer probationary/permanent teaching employment. With an uncertain prospect of obtaining permanent teaching employment in Nova Scotia, it is reported that many graduates are lured to teach in other jurisdictions. The pressure to accept permanent employment elsewhere, with a guarantee of sufficient earnings, is often heightened by the graduate's obligation to repay student debt.

There are no available data on the extent to which school boards outside of Nova Scotia are able to "hire away" graduates of teacher education programs in the province. Officials of school boards and teacher education institutions are able to cite numerous instances where this has occurred. Because there is a similar pattern of teacher shortages in certain subjects in Nova Scotia and elsewhere, new teachers with academic backgrounds in fields where there is a shortage are the most desired by school boards in and out of the province.

Nova Scotia School Boards' Postponed Ability to Offer Regular Employment to New Teachers

There are three factors that can contribute to the delay of school boards in offering employment to new teachers. These factors can be cumulative, and cause school boards to postpone hiring new teachers until August, or even September, for a school year starting in September.

The first factor is the timing of the provincial government's announcement of funding for school board operations. This announcement does not occur until April or May, and sometimes later, for the school year commencing in September. There is no surety that the previous year's level of funding will be at least maintained. Until the amount of funding is known, school boards cannot complete their staffing projections, which will identify vacancies and, in recent years, has also included reductions in the number of teachers.

The second factor is the "staff placement" provision in the *Teachers' Provincial Agreement*, which specifies extensive procedures to locate alternative employment for permanent teachers subject to layoff due to a reduction in teaching positions. If a school board cannot find employment for its permanent teachers who are to be laid off, then the teachers have the right to fill suitable vacant positions for which they are qualified in another school board in the province. In recent years nearly all of the placement has been accomplished within the school board where various options are explored, such as

- counseling redundant teachers about retirement, if this is an option
- placing redundant teachers in other permanent, term, or long-term substitute positions
- arranging for job sharing opportunities

Until the staff placement process is completed, when redundant permanent teachers province wide have been placed, school boards do not know the complete configuration of their vacancies. Although there is provision for school boards to receive approval from the "Provincial Placement Committee" to proceed with a limited number

of teacher hirings before the staff placement process has run its course, this has not been utilized in recent years.

The third factor is the provision in local collective agreements between individual school boards and the NSTU, that gives existing permanent teachers the right to compete for vacant positions in another school of the local board. As teachers are successful in being transferred to another school, a new set of vacancies is created, which are available for internal competition. This process cannot start until staff placement is concluded, and in itself may require a month to complete.

Trend of School Boards to Hire Term Teachers for Regular Positions

In recent years, Nova Scotia school boards are offering mostly term positions to new teachers. Term teachers have a contract of employment for a specific period, and they do not have the protective staff placement rights of their permanent counterparts. Hiring term teachers avoids the problems associated with staff placement, both within a school board and provincially, when their employment is not continued. While term teachers are still utilized to temporarily fill-in for regular teachers on leave, it is apparent that they are also being used to fill regular positions that are under the threat of being eliminated if there is a future shortage of funded positions. Even though many term teachers have their contracts routinely renewed, they remain vulnerable in the event that a school board needs to reduce the number of teachers.

By offering primarily term positions, Nova Scotia school boards are at a disadvantage when recruiting new teachers from teacher education programs, compared to school boards from other jurisdictions that are offering probationary/permanent positions.

Recent trends in the appointment of new probationary teachers and new term teachers are shown below for 1998-99 through 2000-01. New probationary teaching positions may be filled by former term or substitute teachers and by members of the new supply of teachers; new term positions may be filled by former substitute teachers or by members of the new supply of teachers. Also shown are the transitions from term to permanent status and the reappointment of term teachers.

The number of new probationary teachers has dwindled from 671 in 1998-99 to 30 in 2000-01. Although the number of new term teachers has also declined, from 549 to 343, the rate of descent has not been as steep. In 1998-99, probationary appointments accounted for 55% of

the total of new probationary and new term appointments, but in 2000-01 probationary appointments were only 8% of the total. Concurrently, the number of term teachers who were also term teachers in the previous year went from 572 to 795, an increase of 39%.

Table 6

Employment of New Probationary and New Term Teachers

	1998-99	1999-00	2000-01
New Probationary Teachers	671	100	30
New Term Teachers	549	410	343
New Permanent Teachers Who Were Teachers in the Previous Year	228	47	93
Term Teachers Who Were Term Teachers in the Previous Year	572	756	795
% of all term teachers	*50.4%*	*63.7%*	*68.4%*

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

The number of term teachers transitioning to permanent went from 228 in 1998-99 to 47 in 1999-00 and partially recovered to 93 in 2000-01. In these cases, accumulated term teaching experience was used to meet the probationary service requirement for appointment to permanent status. Teachers who were hired initially on term contracts, therefore, have an opportunity to become permanent teachers.

There are five reasons for the changing pattern of new hiring, the reappointment of term teachers, and conferring permanent status to term teachers:

- Declines in the number of teachers retiring in the aftermath of the Early Retirement Program, that accelerated teacher retirements between 1994 and 1998, have reduced the quantity of permanent positions that would normally be vacated and available to new teachers. The number of teachers retiring will increase substantially starting in year 2003-04, as discussed in Section 4.7.
- There was a reversal in 1999-00 of the previously upward annual trend in the number of funded permanent teaching positions. The decrease in funded teaching positions, due to lower enrolments, is projected to continue until at least 2009-10, as described in Section 6.1.
- Uncertainty about funding for the next school year and about the forthcoming level of retirements have made school boards cautious about offering probationary/permanent positions that may not become available or be sustainable. Term contracts, providing

inherent staffing flexibility, are offered instead. Term teachers with long-standing service are given probationary or permanent contracts when secure, unfilled permanent positions materialize.

- The number of teachers on temporary leave increased significantly in the years after 1997-98. Given the declining number of funded teaching positions, in some instances, probationary/permanent teachers were able to fill-in for the absences of their colleagues. In other instances, term teachers (or long-term substitutes) would be engaged. Section 4.8 analyses the factors underlying the recent increase in teacher leaves, and posits that further increases are unlikely.
- A number of permanent teaching positions are being held by teachers who are unable to work because of disability, and are receiving disability pensions. With the possibility of returning to work at a future date, these teachers can retain their permanent positions until normal retirement age. In the interim, their positions are taken by term appointments. The Department of Education surveyed human resource officials of the school boards in November 2001 to determine the number of teachers receiving disability pensions, and potentially retaining permanent positions. Four school boards, employing 75% of all permanent teachers, responded and reported having a total of 123 teachers receiving disability pension or on indefinite leave due to illness. Of these, approximately 40% had this designation for more than 30 months. Although their quantity is not substantial, when the number of permanent teaching positions is otherwise decreasing, teachers on disability pension is a reservoir of permanent positions that could be used in recruitment.

Inadequate Remuneration of a Bridging Teacher's Certificate to Attract Experienced Teachers

Although generally not an issue in recruiting new teachers, the lower remuneration associated with the Bridging Teacher's Certificate has been cited as a barrier to attracting experienced teachers from other jurisdictions. There have been a few instances mentioned where school boards attempted to hire an experienced teacher from outside of Nova Scotia, but the teacher did not qualify for a Nova Scotia Teacher's Certificate because of inadequacies in his/her teacher education background. Although the teachers were eligible for a Bridging Teacher's Certificate, the maximum earnings allowed with bridging certification may be considerably lower than an experienced teacher can earn elsewhere.

4.3 Curriculum Requirements and New Course Offerings

Curriculum content and education requirements are continually evolving. These have a bearing on the qualifications of teachers, especially for the subjects affected. Also, time spent during the regular school year for the professional development of teachers, needed to implement new curriculum and teaching methods, may create a demand for substitute teachers. Public education instruction in Nova Scotia adheres to the *Public School Program* (*PSP*) which is prescribed and periodically revised by the Department of Education. The *Research Paper* outlined major changes in curriculum emphasis and graduation criteria to the *PSP* during the decade of the 1990s. The phase in of the changes was completed in the 2000-01 school year.

A number of new course initiatives are underway, which have a current and future impact on the demand for teachers. These include

- a new compulsory credit in canadian history replacing the previous social studies credit requirement (French and English instruction schools)
- an additional high school mathematics course entitled Pre-Calculus 12, which is expected to attract a large student enrolment (English)
- a pilot for a new workplace health/safety course in high school (English)
- a pilot for a new multi-disciplinary innovative studies program (English)
- new resources in physics, chemistry, biology and mathematics for grade 11 students (French)
- piloting new technology course at the grade 11 level (French)
- piloting an optional français littérataire course at the senior high level (French)

In addition, to prepare teachers for new or strengthened curriculum initiatives. upcoming professional development activities for English instruction will focus on literacy initiatives in elementary grades, student career portfolio development in junior and senior high levels, mathematics in senior high, science in grades 7 through 10, and technology education in grades 7 and 8. French language instruction will also be focussing on science and mathematics at the elementary level, literacy development in grades 4 through 7, and integration of technology in the various subject areas and grade levels.

All of these curriculum initiatives have a direct impact on the professional development needed by teachers.

Implications for Substitute Teacher Demand

The survey of school principals regarding substitute teachers, conducted for this *Update* and described fully in Section 9, depicts a widespread and on-going difficulty in finding qualified teachers to substitute for both English and French schools and for French second language programs. There were many principals' comments about the problem of trying to find substitute teachers when provincial or board-level professional development days were scheduled. During these times a number of teachers in a given subject would be taken out of their classrooms at the same time.

To ease the need to locate and engage substitute teachers, the Department of Education has encouraged school boards to arrange teacher professional development during times when schools are not operating. This can mean closing schools temporarily during the school year or offering professional development during the summer and school breaks.

4.4 Increasing Importance of Instruction in the French Language

In Nova Scotia public education is delivered in either English or French as the basic language of instruction. The Acadien provincial has the province-wide responsibility for providing French first language education to children of entitled parents. French second language education is provided through the six regional school boards. This includes

- Core French: language course in French provided to non-Francophone students
- Extended Core French: non-Francophone students taking a language course and a Social Studies course in French
- French Immersion: non-Francophone students taking most or all of their courses in French, beginning either in elementary grades (early immersion) or junior high (late immersion) and continuing in senior high

Although English remains the predominate language of instruction in Nova Scotia, enrolment is increasing in programs where French is the language instruction, as indicated below. Between 1996-97 and 2000-01, the total number of students in programs where French is the language of instruction has increased by 16.8%.

Table 7

Enrolment in French First and Second Language Programs

Year	Acadien provincial	Early immersion	Late immersion	Extended Core	Total
1996-97	4,153	4,052	4,387	4,121	16,713
1997-98	4,182	4,164	4,800	4,248	17,394
1998-99	4,254	4,530	5,200	4,388	18,372
1999-00	4,171	4,996	5,507	4,172	18,846
2000-01	4,109	5,335	6,128	3,946	19,518

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

Regardless of the language of instruction, teachers must meet the same requirements for Nova Scotia certification. The profile of courses offered is approximately the same for instruction delivered in English or French, and the subject/skill qualifications needed of teachers would be comparable. With French language instruction, however, teachers must be fluent in French. This additional qualification significantly reduces the potential supply of teachers to deliver education in the French language. Because most French-speaking teachers are bilingual, they also have the option of teaching in English language schools. This *Update* does not examine in detail the demand and supply of teachers by language of instruction. It should be apparent, nevertheless, that wherever in Nova Scotia there is a shortage of qualified regular or substitute teachers, it is likely that the implications would be even greater for schools teaching in French.

4.5 Trends in Student Enrolments through 2009-10

The number of students enrolled is a fundamental determinant of the number of teachers required. The current downward trends in enrolment are a reflection of decreases in the birth rate in Nova Scotia. The birth rate is expected to continue decreasing at least through the projection period. These trends are similar elsewhere in Canada. Other factors have also played an important role in causing regional demographic distributions. They include international immigration and emigration, interprovincial migration, and intraprovincial migration at the school board level.

Table 8 contains 1992-93 and 2000-01 school year enrolments for Nova Scotia by grade level, and totals for each board. (Note, regional school boards were reorganized into their present configuration in 1995, and prior school board enrolment statistics are not available.) Also indicated are corresponding projections for 2004-05 and 2009-10.

(The projections used in this study to 2004-05 were produced by the Nova Scotia Department of Education, and are published in the *Statistical Summary 1999-00*. Enrolment projections from 2005-06 through 2009-10 were produced for this report, and are derived from Statistics Canada "medium" population projections for Nova Scotia and counties.) The trend of declining enrolments in Nova Scotia, evident throughout the 1992-93 to 2000-01 period with an average annual decrease of 0.8%, is projected to accelerate in 2000-01 to 2004-05 (annual decline of 1.6%) and 2004-05 to 2009-10 (- 2.3% per year). By level, the decreases are initially steepest in elementary grades, and then proceed to both junior and senior high school.

All boards, with the exception of Acadien provincial, are projected to experience declines in enrolment over the period to 2009-10. In 2000-01 to 2004-05, however, Acadien provincial enrolment is projected to increase slightly.

Table 8

Actual and Projected Public School Enrolments

			Projections **		% Change (*% annual growth rate*)		
Nova Scotia	**1992-93**	**2000-01**	**2004-05**	**2009-10**	**1992-93 2000-01**	**2000-01 2004-05**	**2004-05 2009-10**
Elementary	86,017	80,418	72,064	62,920	- 6.5% (-0.8%)	-10.4% (-2.7%)	-12.7% (-2.7%)
Junior High	38,801	37,130	36,753	32,268	- 4.3% (-0.5%)	- 1.0% (-0.3%)	-12.2% (-2.6%)
High School*	40,394	38,325	37,259	35,541	- 5.1% (-0.7%)	- 2.8% (-0.7%)	- 4.6% (-0.9%)
Total	166,112	155,873	146,076	130,729	-6.2% (-0.8%)	-6.3% (-1.6%)	-10.5%(-2.2%)
Cape Breton - Victoria		21,080	18,685	15,245		-11.4% (-3.0%)	-18.4% (-4.0%)
Strait		10,228	8,781	8,152		-14.2% (-3.7%)	-7.2% (-1.5%)
Chignecto - Central		26,630	25,036	22,343		-6.0% (-1.5%)	-10.8% (-2.3%)
Halifax		57,741	56,088	52,373		-2.9% (-0.7%)	-6.6% (-1.4%)
Annapolis Valley		17,767	16,824	15,146		-5.3% (-1.4%)	-10.0% (-2.1%)
Southwest		18,318	16,564	14,356		-9.6% (-2.5%)	-13.3% (-2.8%)
Acadien provincial		4,109	4,176	3,738		1.6% (0.4%)	-10.5% (-2.2%)

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education
** Includes "other" secondary grades.*
*** There is a 623 student difference between the sum of the school boards and the Nova Scotia total in 2009-10 due to minor differences in forecasting.*

4.6 Ratio of Students Per Teacher and Projected Teacher FTEs through 2009-10

The ratio of students to teachers determines the number of teachers required for a given enrolment size. The ratio of students per teacher is related to class size, but the education system also has teachers who have assignments away from the classroom in administration. The specification of a teacher in the ratio of students per teacher is complex because the amount of input of a teacher is not fixed. Some teachers work full time and others part time (perhaps on a regular basis or as a substitute). When trying to delineate teachers by grade level there is the additional complication that many teachers are involved in multiple grades, for example, a music teacher who has responsibilities in elementary, junior high, and senior high. The answer to resolving the difficulty in counting teachers, whether they have classroom or administrative duties, or both, is to measure the "full-time equivalent" (FTE) of teacher effort, which allocates teachers' time according to the amount devoted to each teaching and administrative task in relation to the standard workload of a full-time teacher.

Table 9

Recent and Projected Student Per Teacher/Administrator Ratios

	1997-98	1998-99	1999-00	2000-01	Projected 2009-10
Elementary					
Students	84,408	82,993	81,930	80,418	62,920
Teachers FTE	4,385	4,494	4,453	4,450	3,745
Students per Teacher FTE	**19.2**	**18.5**	**18.4**	**18.1**	**16.8**
Junior High					
Students	38,310	38,246	37,810	37,130	32,268
Teachers FTE	2,182	2,207	2,195	2,158	2,017
Students per Teacher FTE	**17.6**	**17.3**	**17.2**	**17.2**	**16.0**
Senior High					
Students	39,641	38,772	38,465	38,325	35,541
Teachers FTE	1,981	1,983	1,977	1,955	1,942
Students per Teacher FTE	**20.0**	**19.6**	**19.5**	**19.6**	**18.3**
Administration					
Students	162,359	160,011	158,205	155,873	130,729
Admin FTE	880	910	933	881	792
Students per Admin FTE	**184.5**	**175.8**	**169.6**	**176.9**	**165.1**

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

Table 9 shows the ratios of students per teacher FTE by grade level and for administration (regardless of grade) in 1997-98 to 2000-01. Also shown for comparison are the estimated final-year ratios for 2009-10 used in this *Update* to project the demand for teachers and administrators for that year. Although overall enrolments are projected to decline by 16.1% between 2000-01 and 2009-10, the total number of teachers is estimated to decrease by 10.0% over the period. The proportionately smaller decrease in the number of teachers recognizes that there is a limit that schools can continue to be consolidated in response to declining enrolments. The students per teacher FTE ratios are projected to decrease through to 2009-10.

Table 1-A, in Appendix A, presents projected enrolments and estimated FTEs by grade level/administrators for Nova Scotia by year from 2001-02 through 2009-10. School boards have reported that between 2000-01 and 2001-02 there was a decrease in total teacher FTEs of 143. The distribution of teacher FTEs by grade level/administrators in 2001-02 are preliminary calculations. For the period 2002-03 to 2009-10, teacher FTEs by grade level/administrators are estimated on the assumption that there will be a consistent decrease in the respective students per teacher FTE ratios from one year to the next.

4.7 Teacher Pension Plan Provisions and Estimated Annual Teacher Retirements through 2009-10

Attrition due to retirements of regular teachers comprises the largest component of demand for new teachers. The *Research Paper* estimated that retirements would account for about 93% of the net demand for new teachers between 1998-99 and 2009-10. Teacher retirements are re-estimated for this *Update*, taking into consideration the most current pension plan provisions and related information.

Options for Teachers to Retire with Pension

There are a variety of rules that apply to determine when a regular teacher is eligible to retire and collect either a partial or full pension. Pension benefits are accumulated for each year of pensionable service at the rate of 2% of a teacher's average pay in the five highest-earning years. The highest pension attainable is 70%, relating to 35 years of service. A teacher may retire and receive an unreduced pension as soon as his/her years of service and age meet the minimum requirements for eligibility.

The current rules for eligibility for retirement are summarized below:

35 and Out

A teacher with 35 years of pensionable service is eligible to retire and collect a maximum pension regardless of age.

65 and 2

A teacher who attains the age of 65 and has at least 2 years of pensionable service is eligible to receive an unreduced service pension.

60 and 10

A teacher who has reached the age of 60 years and has at least 10 years of pensionable service is eligible to receive an unreduced pension.

Rule of 85

A teacher who has reached the age of 55 and has combined years of age and years of pensionable service equal to at least 85 is eligible to receive an unreduced pension.

Reduced Pension

A teacher who attains the age of 55 and has at least 2 years of pensionable service is eligible to receive a **reduced** pension, provided that he/she is not otherwise eligible for an unreduced pension. The amount of pension reduction varies depending on age and service, and typically ranges from 5% to 25% of pensionable earnings.

Past experience indicates that few teachers retire under the reduced pension options.

In order to decrease the employment of teachers in response to declining enrolments, in the Spring of 2000 pension plan additions, referred to as "Workforce Adjustment Options," were introduced to encourage teachers to retire, work part time, or take leaves of absence. These are described below.

Workforce Adjustment Options

'50 and 80' Reduced Pension

As of July 2000, a teacher who is at least 50 years old and has at least 30 years of pensionable service may receive a **reduced** pension. The base pension amount would be the same as calculated under the Rule of 85, but would be reduced by 0.5% per month that the teacher is under age 55 when retiring.

Other pension-related Workforce Adjustment Options, which are available only in the years 2000-01 through 2003-04 follow:

Full Pension Credit for Reduced Work

A teacher who accepts an assignment to work less than previously, can receive pension service credit at the former (e.g., full time) work level. The teacher will continue to make contributions to the pension plan commensurate with her/his former salary.

Full-Time Leave with Pension Credit

A teacher taking a leave of absence for up to two years may continue to contribute to the pension plan at her/his usual rate and receive full pensionable service credit for the leave period.

Phased in Retirement

A teacher who is eligible for an unreduced pension may phase in retirement by working part-time for up to two years prior to completely retiring. During this period the teacher will receive a "top up" from the pension plan so her/his earnings will remain up to 90% of the full-time amount. The teacher's subsequent pension benefits will be reduced by an amount actuarially equivalent to the "advance" received during part-time teaching.

Although not currently in force, between 1994 and 1998, there was an Early Retirement Program that modified the Rule of 85 by decreasing eligibility for an unreduced pension to 82 years of combined age and years of service, with a minimum age of 52 years. The objective of the program was to encourage teachers to retire in the face of declining enrolments. Nearly 2,200 teachers retired under this program, which advanced the retirement date of teachers who would otherwise be eligible for retirement now.

Estimating the Number of Teacher Retirements

Complicating the task of estimating the number of teachers who will be retiring each year is the fact that many teachers do not retire when they first become eligible for an unreduced pension (i.e., based on 2% per year of pensionable service). Indeed, a few teachers continue to work even when they could receive a maximum pension. The Pension Services Group of the Department of Finance, which manages the Teachers Pension Plan, estimates that 40% of teachers who could retire with an unreduced pension work beyond their eligibility date. One incentive for continuing to work is to add to pensionable years of service, which will increase an eventual pension at the rate of 2% per year. After 35 years are accumulated, however, this incentive is removed.

In order to gauge the possible range of patterns of retirements, this *Update* examined two estimates of the number of teachers retiring per year from 2001-02 to 2009-10:

Scenario A.

Teachers will retire as soon as they are eligible for an unreduced pension, or age 65 if occurring beforehand.

Scenario B.

Teachers will retire as soon as they have 35 years of service and are, therefore, eligible for a maximum possible pension (i.e., 70% of highest five-year average earnings), or age 65 if occurring beforehand.

Scenario A presumes that teachers will retire as soon as they can receive a pension without penalty, which happens when any of the unreduced pension eligibility criteria is satisfied. With scenario A, 3,923 teachers would retire during 2001-02 to 2009-10. Scenario B presumes that teachers will delay retirement as long as possible until they can earn the highest possible annual pension. Total teacher retirements with scenario B would be 3,014. In both scenarios it is assumed that teachers will not work beyond age 65. Teacher employment records indicate that very few do.

In this *Update*, to estimate the annual labour market demand for teachers arising from retirement, a blend of scenarios A and B retirements per year is used. The calculation for the blended retirements was proposed by the Pension Services Group of the Department of Finance, and reflects the pattern of teacher retirements based on experience in recent years. The number of retirements between 2001-02 and 2009-10 for the blended scenario would be 3,630. Table 2-A in Appendix A presents estimates of annual retirements from 2001-02 through 2009-10, based on scenarios A and B, and the blended number for Nova Scotia and by school board.

4.8 Non-Retirement Attrition of the Teacher Workforce

Other than retirement, the reasons that regular teachers leave employment in Nova Scotia public education are

- disability (receiving a disability pension)
- deceased while employed
- occupational mobility (working in other sectors or jurisdictions, or leaving the labour force)

There is also temporary attrition where teachers remain employees of the school board but withdraw from work for a period to take leaves for maternity/parental, sabbatical, or extended illness.

The attrition of substitute teachers is a special situation relating to the retention of new entrants to public education in the province, and is discussed in Section 10 of this *Update*.

Disability with Pension

A disability pension is available to teachers who can no longer work because of illness or injury. Between 1995-96 and 2000-01 the number of teachers initially receiving a disability pension ranged from 9 to a high of 30 per year. No trend is apparent and there is not any systematic way to project the number of occurrences. The average number of initial disability pensions per year for the period was 18.2. For the purposes of teacher labour market demand projections in this *Update*, the number of teachers leaving employment due to disability is assumed to be 20 per year.

Deceased

The number of teachers who die while actively employed in public education in Nova Scotia is very small, ranging from 5 to 18 per year in the period starting in 1995-96 through 2000-01, and averaging 9.0 annually. The number of teacher deaths per year is unpredictable, other than it will be small. Ten deaths are assumed to occur each year for purposes of the teacher demand projections in this *Update*.

Occupational Mobility

There are a number of reasons that regular teachers migrate from employment in Nova Scotia public education. These include job dissatisfaction, better opportunities in another sector or jurisdiction, accompanying a spouse migrating to another region, and withdrawal from the work force. For term teachers there is also the factor of not having their contract renewed, and being unwilling or unable to substitute teach.

The annual number of regular teachers leaving Nova Scotia public education due to occupational mobility from 1995-96 through 2000-01 is indicated below. (These are regular teachers who worked in the previous year but were not employed by a school board, in any teaching capacity, in the given year, and who were not on leave, nor receiving a retirement or disability pension, nor deceased.)

The average number of teachers leaving Nova Scotia public education was 139.8 per year, with term teachers comprising 62% of this figure. As a proportion of the teacher workforce, occupational mobility represents only about 1.5% per year, 0.6% for probationary/permanent teachers and 7.3% for term teachers.

Table 10

Regular Teacher Occupational Mobility from Nova Scotia Public Education

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Probationary/Permanent	39	67	50	44	46	59
Term	73	66	72	68	89	138
Total	112	133	122	112	135	197

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

There is no trend apparent for occupational mobility of probationary/permanent teachers. In 1999-00 and 2000-01 there was a marked increase in the occupational mobility of term teachers. This coincides with the decline in opportunities for term teachers to become probationary/permanent teachers, as a result of downsizing of the regular teacher workforce. The expectation is that the employment of regular teachers will continue to decline, but perhaps at a reduced pace, through 2009-10. Given this prospect, a level of 140 per year is assumed for occupational mobility for the demand projections in this *Update*.

Temporary Attrition—Teachers On Leave

Temporary attrition refers to teachers who remain employees of the school board but withdraw from work for a period to take leave for maternity/parental, sabbatical, or extended illness. This form of attrition creates the possibility of term employment to fill in while a permanent or probationary teacher is on leave. The factors affecting the number of teachers taking leave include related collective bargaining provisions, legislation pertaining to maternity/parental leave, and employment insurance provisions. So long as the number of teachers on leave remains constant, the effect on the aggregate demand for new teachers is neutral. As a group, teachers going on leave are offset by an equal number of those returning from leave. In recent years, however, there has been a significant increase in the number of teachers taking leave. The figures below are the number of leaves taken by regular teachers, for at least part of a year, from 1995-96 through 2000-01. In each of the years 1998-99, 1999-00, and 2000-01 there were substantial increases in the number of leaves compared to the year before. Between 1997-98 and 2000-01 the number of leaves taken nearly doubled.

Table 11

Number of Leaves by Regular Teachers for at Least Part of a Year

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Teachers on Leave	520	545	515	644	726	1,025

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

The nature of the increase in leaves by type for 1997-98 through 2000-01 is shown below.

Table 12

Leaves by Type

Type of Leave	1997-98	1998-99	1999-00	2000-01
Deferred Salary	141	145	154	186
Educational/Sabbatical	3	38	49	38
Leave of Absence	184	225	266	394
Maternity Leave	71	112	127	163
Sick Leave	116	124	130	244
Total	515	644	726	1,025

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

Three factors combine to cause the number of leaves to increase:

- The rise in educational/sabbatical leaves in 1998-99 through 2000-01 reflects a change in the Teachers' Provincial Agreement provisions.
- The increase in the number of leaves of absence coincides with the Workforce Adjustment Option that allows teachers to take a leave of absence for up to two years while continuing to accumulate the time on leave as pensionable service. This provision is available through 2003-04.
- The substantial increase in Maternity Leaves is likely linked to the influx of younger teachers who, in part, replaced teachers taking advantage of the Early Retirement Program between 1994 through 1998. Teachers on maternity leave may also take leaves of absence and sick leaves.

The substantial rise in the number of leaves has not been accompanied by an equivalent loss of teaching effort, as measured in FTEs. For example, between 1999-00 and 2000-01 the number of leaves went from 726 to 1025, an increase of 41.2%; concurrently the number of FTEs lost due to leaves went from 459 to 554, an increase of 20.7%.

Regarding the outlook for the demand for teachers, the question is whether the number of leaves will increase, decrease, or remain the same. The assumption in the projections of regular teacher demand is that the increase in the time lost due to leaves has peaked, but may not decrease. Therefore, the impact on the new demand for teachers is neutral, or zero, for the projection period.

5. The Current Availability of Regular Teachers in Nova Scotia—Results of the 2001 Survey of School Boards

5.1 Scope, Purpose, and Response Rate of Survey

In the summer of 2001, the Department of Education surveyed human resource officials of Nova Scotia's seven school boards regarding their board's experience hiring teachers to fill regular (i.e., term and permanent) positions for the 2000-01 school year. The specific purpose of the survey was to determine

- the ability of the school boards in Nova Scotia to hire qualified teachers to fill vacant term and permanent teaching positions; thus providing an indication of teacher shortage
- whether it was easier or more difficult to hire qualified regular teachers now than two years ago
- whether it will be easier or more difficult to hire qualified regular teachers in the next two years
- the possible reasons for a school board's difficulties in attracting candidates and hiring qualified regular teachers, now and in the future

The survey also asked for the human resource officials' general comments regarding the labour market for teachers. A copy of the survey form is in Appendix C.

"Qualified teacher" in the survey meant that the new teacher would have an academic major or minor (or equivalent) in the subject(s) that she/he would be hired to teach. In any case, teachers would have the qualification of either an Initial Teacher's Certificate or a Bridging Teacher's Certificate issued by the Nova Scotia Department of Education.

The survey was mailed to the human resource director at each school board. All of the recipients responded.

5.2 Availability of New, Qualified, Regular Teachers by Subject/Specialty Area

In order to quantify hiring difficulties for specific subjects/specialties, the human resource officials were asked to respond to the following questions for term and for permanent positions by subject/specialty area:

- How many teachers were newly hired?
- How many teachers that were newly hired were qualified (i.e., have an academic major or minor—or equivalent— in the subject/specialty area)?

Further, for term and for permanent positions by subject area, school board human resource officials were asked the qualitative question, How difficult was it to find enough qualified candidates? with the three options for response indicated below. A provincial summary of the survey data is shown below by permanent and term positions, and by secondary and elementary grade levels.

Table 13

Human Resource Survey Summary for Nova Scotia

Newly Hired Teachers

	Permanent Position					Term Position				
	Total Hired	Number Qualified	Difficulty* N	S	U	Total Hired	Number Qualified	Difficulty* N	S	U
Elementary	1	1	3	-	-	275	255	8	1	3
Secondary	26	26	17	14	2	559	482	47	41	14

* *N - Not difficult S - Significant effort U - Unable to find enough*

For all schools boards only 27 teachers were newly hired in permanent positions; 1 was at the elementary level and 26 were secondary. All of the permanent teachers were reported to be qualified for their respective assignments. For permanent positions, in all subjects, two school boards reported being unable to attract enough qualified candidates. Eight-hundred and thirty-four term teachers were newly hired; 275 were at the elementary level and 559 were secondary. Two-hundred and fifty-five, or 93%, of the elementary term teachers were considered qualified according to the survey criteria. At the secondary level 482, or 86%, were qualified. Compared to permanent teaching positions, there was more difficulty attracting qualified term candidates.

The detailed results of the survey by subject/specialty are in Table 3-A, Appendix A. Regarding the relatively few permanent positions that

were filled, the only subjects where boards reported that they were unable to find qualified candidates were secondary other subjects and special education psychologists. The quantitative responses indicate, however, that even in these subjects all of the teachers hired were qualified. The pattern of the responses for term positions portray a complex situation. In subjects such as English, French second language, social studies, biology, and other sciences, no school boards reported that they were unable to attract enough qualified candidates (indeed, the majority stated that they had no difficulty in finding qualified candidates). Even so, not all of the term teachers hired in these subjects were qualified. All but one school board stated that it was not difficult to find candidates for general elementary teacher positions, and all 128 general elementary teachers who were hired in term positions were considered qualified.

From the perspective of school boards either not being able to hire qualified term teachers, or not being able to attract enough qualified candidates for these positions, the following subjects appear to be the most problematic to recruit: mathematics, other sciences, physical education, fine arts, technology education, family studies, secondary other subjects, special education resource, special education other, and elementary other. In addition school boards indicated significant difficulty finding qualified teachers for French first and second languages.

5.3 Ability of the School Boards to Hire Qualified Teachers

The survey results by school board are in Table 4-A, Appendix A. The Chignecto-Central, Southwest, and Acadien provincial school boards hired teachers for permanent positions. All of the newly hired permanent teachers were qualified, although Chignecto-Central and Acadien provincial noted that for one subject area each they were not able to attract enough qualified candidates. All of the school boards responding to the survey with quantitative information reported hiring a number of new term teachers. In the Cape Breton-Victoria, Chignecto-Central, and Halifax school boards all of the newly hired term teachers were qualified. Annapolis Valley and Southwest had the most difficulty recruiting qualified teachers: at Annapolis Valley 55% of newly hired term teachers were qualified and at Southwest 80% were. All school boards except Halifax indicated that they had difficulty finding enough qualified candidates for at least one subject area.

5.4 Changing Ability of School Boards to Attract Qualified Candidates

Survey results concerning the change in the school boards' ability to attract qualified candidates for permanent and term positions is shown below. Both the change over the past two years and the expectation over the next two years are recorded.

Acadien provincial did not answer this section of the survey. All responding school boards, except Halifax, responded that during the past two years it had become more difficult to attract qualified candidates; Halifax responded that it was about the same. The school boards were unanimous in the projection for the future in that it will be more difficult to attract qualified candidates for both permanent and term positions.

5.5 Comments by Human Resource Officials

The survey asked school board human resource officials for their comments about the factors causing problems in hiring teachers for subjects/specialties where there were not an adequate number of applicants. They were also asked for their general comments on the issue of teacher demand and supply. The nature of the comments requested was informal. Some officials responded with only phrases that, nevertheless, convey the nature of the difficulties. The responses are transcribed below without further analysis.

Table 14

Survey of School Board Human Resources Officials Comments

Subject/Specialty Related Comments	
Cape Breton-Victoria	Speech language—limited training. Resource—limited training in area.
Strait	The majority of French first language teachers were qualified, especially in the teaching background and methodology, however, there were some minor concerns regarding their language proficiency. There were very limited number of applicants for vacancies in senior math, French second language, physics, chemistry, fine arts, technology education and special education (youth services facilitator and service learning disabilities). Recommendation for hiring was made from a very small pool of applicants. Some fine arts positions were re-advertised and subsequently filled. Even if these vacancies were advertised a number of times, 2 vacancies in speech language pathology and 1 in education psychologists remain unfilled. A few candidates were recommended for hiring but declined the offer due to issues of salary level, certification and recognition of experience through the certification process. As retirements continue to increase, the demand for teachers will increase and we anticipate increased difficulty in filling positions at the senior high level, especially in French, mathematics, sciences and specialty areas. The speech and language and education psychologist positions will continue to be very difficult to fill.
Halifax	French immersion, sciences, High School Learning Resource Centre—course not yet available at Mount Saint Vincent.
Acadien provincial	We have problems with specializations.
General Comments Regarding Recruitment Difficulties and Teacher Shortages	
Chignecto-Central	Lack of qualified applicants.
Annapolis	Recruitment from USA and other provinces. Rural area; lack of teachers qualified in specific areas, especially specialists for part-time positions.
Southwest	Geography—many of our schools being away from metro centres. Limited pool of qualified candidates. Even though we managed to fill the vast majority of positions with "qualified" candidates, in many cases multiple advertisements were required. Furthermore, we find that we are settling for weaker candidates, some of which do not last the year.
Acadien provincial	There are very few available people. We have a hard time attracting teachers in our rural areas. The salary scales of certain other provinces are more tempting. Another difficulty is the date when we can start recruiting. Often, the other provinces have already recruited in our regions.

6. Demand for Teachers in Nova Scotia

6.1 Overview of the Demand Model

The demand for teachers refers to the number of new teachers who will be required annually by the school boards in Nova Scotia. This *Update* projects demand for the 2001-02 through 2009-10 school years. There are two components of the annual demand for teachers:

- **annual change in the level of employment of teachers** in Nova Scotia public education, as determined by variations in student population and the ratio of students per teacher. (Changes in enrolment, ratio of students per teacher, and employment of teachers were the subjects of Sections 4.5 and 4.6 of this *Update*.)
- **attrition replacement** to compensate for teachers who leave Nova Scotia public education due to
  - retirement (Section 4.7)
  - disability (Section 4.8)
  - deceased (Section 4.8)
  - occupational mobility (Section 4.8)

Also a potential factor is changing teacher leaves, assumed to be neutral (Section 4.8).

Projected teacher demand is expressed in terms of FTEs. The projections are for regular teachers assuming they will be working for a full school year of 195 days. Partial FTEs of regular part-time and part-year term teachers are included in the combined teaching effort, but are accumulated and expressed as a full-time teacher equivalent, working 195 full days. There is no reduction in FTEs for regular teachers taking time off for professional development days, illness, and other short-term absences. In terms of teaching effort, these absences will be filled by substitute teachers.

When quantifying the aggregate actual number of regular teachers that may be demanded, there is little difference between number of individuals and FTEs. In 2000-01, for example, there were 9,444 FTEs provided by 9,863 active regular teachers. Thus, one FTE equates to 1.04 individual active regular teachers, whether full time or part time, and full year or part year. Thus, for every 100 teacher FTEs there are 104 regular active teachers employed, either full time or part time, for at least part of the year.

Table 15 provides the projection of aggregate FTE teacher demand. Retirement scenarios A and B are included in the table as a measure of sensitivity of demand to teacher retirement patterns. Using the "Blend" of the scenarios as a reference, the annual demand for teachers steadily increases from 260 in 2001-02 to 609 in 2006-07, and thereafter fluctuates in the range of 506 to 575 annually.

Table 15

Projected Teacher Full-Time Equivalent Demand by Components for Nova Scotia

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Change in Teacher FTE										
Elementary	-113P	-109	-70	-66	-78	-80	-69	-80	-40	-705
Junior High	-8P	48	15	-19	-38	-50	-33	-15	-42	-141
High School	-8P	2	-11	5	33	43	-3	-32	-42	-13
Administrators	-14P	-6	-7	-8	-8	-8	-11	-13	-13	-89
Total	**-143**	**-65**	**-73**	**-88**	**-91**	**-96**	**-115**	**-140**	**-137**	**-948**
Retirements										
Scenario A	185	253	409	496	499	573	519	543	446	3,923
Scenario B	78	111	255	347	351	462	477	504	429	3,014
Blend	**233**	**171**	**304**	**411**	**449**	**535**	**520**	**534**	**473**	**3,630**
Other Attrition										
Disability	20	20	20	20	20	20	20	20	20	180
Deceased	10	10	10	10	10	10	10	10	10	90
Occupational Mobility	140	140	140	140	140	140	140	140	140	1,260
Total	**170**	**170**	**170**	**170**	**170**	**170**	**170**	**170**	**170**	**1,530**
Teacher Demand										
Retirement										
Scenario A	212	357	506	578	578	647	574	573	479	4,505
Scenario B	105	215	352	429	430	536	532	534	462	3,596
Blend	**260**	**275**	**401**	**493**	**528**	**609**	**575**	**584**	**506**	**4,212**

Note: Numbers may not add to totals due to rounding. P - Preliminary.

6.2 Projected Teacher Demand by Subject/Specialty and Administration

The projected demand by subject/speciality and administration combines the

- replacement demand for teachers who are estimated to retire by year according to the effort devoted to the subjects they taught or administration in 2000-01
- net change in teaching employment and non-retirement attrition components distributed according to the overall teaching and administrative activity in 2000-01

The projection in Table 16 provides a reasonable indication of the future distribution of FTE demand for teachers by subject/specialty and administrative activity. Demand is shown for two periods, a total for 2001-02 through 2004-05 and a total for 2005-06 through 2009-10. The projection should not be interpreted as precise indicators of the future, because there is uncertainty about exactly when teachers will retire (the projection is based on the blended methodology discussed in Section 4.7). Also, experienced teachers do occasionally change the subjects they teach. School board and NSTU officials have noted, in particular, that there is a tendency to change subjects among teachers who start their careers in physical education and "circuit" subject specialties such as music and other fine arts. Another factor not reflected in the projection are revisions in the emphasis of curriculum offered. In the absence of unforseen major future events, however, the results in Table 16 provide a realistic comparison of the relative importance of subjects in terms of the capabilities needed of new teachers.

Table 16

Projected Demand for Teachers in Nova Scotia by Subject/Speciality/Administration

	2001-02 through 2004-05			2005-06 through 2009-10		
	Retirement	Other Factors	Total	Retirement	Other Factors	Total
SECONDARY*	**385**	**133**	**498**	**839**	**116**	**955**
English	70	18	88	162	16	178
French**	17	14	31	58	12	70
Other Languages	1	<0.5	1	1	<0.5	1
Social Studies	52	17	69	115	15	130
Mathematics	52	18	70	136	16	152
Science	49	18	67	104	16	120
Biology	8	3	11	20	3	23
Physics	5	1	6	9	1	10
Chemistry	10	2	12	17	2	19
General & Other Sciences	26	12	48	58	10	68
Physical Education**	20	11	31	61	10	71
Fine Arts	30	14	44	65	12	77
Music**	14	9	23	37	8	45
Other Art	16	5	21	28	4	32
Technology Education	31	8	39	47	7	54
Business Education/ Entrepreneurship	12	3	15	28	2	30
Personal Development/ Career Education	12	8	20	25	7	32
Family Studies	16	4	20	32	3	35
Multiple Subjects	1	<0.5	1	3	<0.5	3
Vocational	2	<0.5	2	2	<0.5	2
ELEMENTARY	**481**	**117**	**598**	**1,067**	**102**	**1,169**
SPECIALTIES:						
Education Support	13	3	16	31	3	34
Guidance	28	5	33	55	4	59
Special Education/Resource	71	23	94	184	20	204
ADMINISTRATION	**161**	**29**	**190**	**335**	**26**	**361**
TOTAL	**1,119**	**310**	**1,429**	**2,511**	**271**	**2,782**

Note: Numbers may not add to totals due to rounding.
** Secondary also includes teachers with assignments in both secondary and elementary grades.*
*** Includes demand in this subject at the elementary level.*

7. Supply of Teachers in Nova Scotia

7.1 Overview of Teacher Supply

The supply of teachers refers to the annual number of new entrants into the Nova Scotia public education labour force who are qualified and will likely seek teaching positions with the school boards. Although most new teachers start their careers as substitutes, the presumption is that individuals seeking teaching positions desire employment as full-time, regular teachers. Also included as potential supply are previously eligible teachers who are not currently employed in Nova Scotia public education but would accept an available and suitable teaching position.

Although sources of teachers in Nova Scotia can be identified from the available data, it is not possible to allocate supply to a region, or school board, within the province. Each school board will have differing advantages and challenges in attracting teachers.

The primary measure of the annual influx of potential new teachers is the number of teaching certifications issued by the Department of Education. Table 17 shows the number of teaching certificates issued according to the location of the recipients' education training institution for the years 1992 through 2000.

Table 17

Nova Scotia Teacher Certificates Issued by Location of Education Institution and Available Teacher Supply

Number of Recipients by Location of Teacher Education Program	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Nova Scotia Institutions	518	612	653	620	422	534	367	334	345	4,405
Institutions Outside Nova Scotia	185	215	211	280	288	303	223	304	238	2,247
Other Atlantic Provinces	116	126	119	122	142	174	81	133	66	1,079
Other Canadian Provinces	53	57	64	84	84	72	60	97	68	639
Maine	0	18	13	56	49	43	68	50	93	390
Other United States	6	7	11	8	7	2	7	5	4	57
Other Countries	10	7	4	10	6	12	7	19	7	82
Total Number of New Certifications	**703**	**827**	**864**	**900**	**710**	**837**	**590**	**638**	**583**	**6,652**
Less: Graduates of Nova Scotia Institutions, with Home Address outside the Province	186	184	183	143	76	101	108	52	57	1,090
Available Nova Scotia Teacher Supply	**517**	**643**	**681**	**757**	**634**	**736**	**482**	**586**	**526**	**5,562**

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education.
Note: Type 1 certificate, excludes non-classroom specialties such as Testing Services, Speech Therapy, and Social Work. In 2000 there were 13 non-type 1 certificates issued.

Teacher Education Institutions as a Source of Supply

The declining trend in the number of teaching certificates issued to graduates of Nova Scotia teacher education institutions, shown in Table 17, reflects the phasing in of a reorganization of teacher education initiated by the Nova Scotia Council on Higher Education in 1994, that included rationalizing and restricting the capacity of teacher education institutions in the province. Included in the reorganization was a plan for the conversion of all teacher education programs to two years in duration. By 1998, the effect of the reorganization was essentially complete.

Traditionally, a proportion of the graduates of Nova Scotia teacher education institutions were not Nova Scotia residents. As a matter of practice, these graduates received Nova Scotia teaching certificates even if they did not intend to teach in the province. For purposes of estimating the supply of teachers, presented in Table 17, non-Nova Scotian graduates are excluded, thus reducing the effective capacity of the teacher education institutions as a source of supply to the province. The proportion of non-Nova Scotian graduates from Nova Scotia teacher education institutions decreased substantially in 1999 and 2000, averaging 16% in those two years, as compared to 26% from 1992 to 1998. This reduction reflects the longer duration of study and increased requirements to obtain a teacher education degree in Nova Scotia, which, in many cases, exceed those needed to teach elsewhere. The current smaller numbers of out-of-province graduates serves to increase the potential of the teacher education institutions here to supply teachers in Nova Scotia.

The approximate capacity of the education institutions in Nova Scotia, number of graduates in 1999 through 2001, and the number of applications for the classes of 2001 through 2003, are shown in Table 18 below.

The English instruction teacher education programs are fully subscribed, and the number of students making applications to these programs remains strong. The Université Sainte-Anne, however, is operating significantly below allowed capacity. This is a long-term deficiency that is becoming a growing problem in the face of increasing demand for teachers fluent in French as a result of growing enrolments in programs where the language of instruction is French, described in Section 4.4. Presently, recruitment efforts for French speaking teachers extends into New Brunswick, Quebec, and Ontario.

Table 18

Teacher Education Institutions in Nova Scotia Capacity, Graduates, and Applicants

		Graduates			Applicants for Class of		
English Instruction	**Capacity**	**1999**	**2000**	**2001**	**2001**	**2002**	**2003**
Acadia University	120	120	124	121	300	453	379
Mount Saint Vincent University	120	120	112	126	400	550	420
St. Francis Xavier University	95	95	103	103	300	470	491
English Instruction Total	**335**	**335**	**339**	**350**			
French Instruction							
Université Sainte-Anne	85	20	11	21	22	N/A	N/A

Source: Deans and Heads of Teacher Education Programs

Other Jurisdictions as a Source of Supply

For the purposes of this study all of the individuals obtaining a Nova Scotia teaching certificate who received their professional training outside of the province, regardless of when, are considered to contribute to the provincial supply of teachers.

As indicated in Table 17, there is a significant number of Nova Scotia teaching certificates issued each year to prospective teachers who received their professional training outside of Nova Scotia. From 1992 through 2000, the number ranged from a low of 185 per year in 1992 to a high of 304 in 1999. The upward trend in this regard coincides with the decreasing opportunity to receive teacher education in Nova Scotia and the implementation of the two-year teacher education degree among Nova Scotia teacher education institutions. Of note is the growth in the number of Nova Scotia initial teaching certificates issued to graduates of the University of Maine system. In 1992 there were none, but by 2000 there were 93. The University of Maine teacher education programs are in relatively close proximity to Nova Scotia and could be completed in 16 months.

The Bridging Teacher's Certificate, introduced in June 2001, provides a mechanism for teachers trained outside of Nova Scotia to qualify for certification and potential employment here. Most teacher education programs in other provinces satisfy the requirements for at least a Bridging Teacher's Certificate. The University of Maine is, or has, adjusted its teacher education programs at Fort Kent and Presque Isle to be acceptable for its graduates to obtain either an Initial or Bridging Teacher's Certificate.

In rare situations, experienced teachers from outside of Nova Scotia who may wish to teach here do not qualify because their teacher education, perhaps taken years ago, do not meet the requirements for initial or bridging certification. The requirements for bridging certification are designed to be inclusive, and the impact on the supply of teachers should be minimal.

7.2 Long-Term Teacher Supply Outlook in Nova Scotia

In the absence of major upheaval, the English and French speaking teacher education institutions should be able to continue graduating approximately 350 qualified new teachers annually. (There is the potential for this number to increase by as many as 65 per year if the Université Sainte-Anne can attract enough qualified applicants to reach its capacity.) Only about 50 of the graduates from teacher education programs in Nova Scotia will likely be students from other jurisdictions whose primary intention is to teach outside of the province. Therefore, the Nova Scotia supply of teachers from indigenous programs can be expected to be in the order of 300 per year.

The indigenous supply should be augmented by about 220 prospective teachers from out-of-province education programs. This assumes that most teacher education programs elsewhere, particularly the University of Maine, will qualify their graduates to receive an Initial or Bridging Teacher's Certificate.

Summarized below is the outlook for the annual supply of teachers in Nova Scotia:

Table 19

Annual New Supply of Teachers in Nova Scotia

Source	Number of Prospective Teachers Per Year
Graduates of Nova Scotia Teacher Education Programs	350
- minus non-Nova Scotians	-50
Total Indigenous Programs	300
Teachers Trained in Out-of-Province Programs	220
Total Average Annual Supply of Teachers	**520**

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

The demand for teachers herein is expressed in terms of FTEs. The discussion of the supply of teachers refers to the number of qualified individuals entering the Nova Scotia public education workforce each

year. The assumption of this study is that the new entrants, as a group, are willing and able to be employed as regular teachers full time. Thus, each new entrant would equate to one FTE of supply.

Aggregate Imbalances of Annual Demand and New Supply

A continuing annual supply of 520 teachers compares to the projected aggregate demand for teachers from 2001-02 through 2009-10, as shown in the following table.

Table 20

New Supply Versus New Demand, 2001-02 to 2009-10

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Supply	520	520	520	520	520	520	520	520	520
Demand*	260	275	401	493	528	609	575	564	506
Difference	260	245	119	27	-8	-89	-55	-44	14

** Demand based on blended retirement estimates*

7.3 Supply of Teachers by Subject Area

The supply of teachers by subject/specialty is estimated on the basis of the undergraduate major of recipients of Nova Scotia teacher certificates each year. Table 21 contains the number of certification recipients by their academic major, from 1994 through 2000. Included in this table are recipients who graduated from teacher education programs in Nova Scotia who were residents of other jurisdictions. In this *Update* such individuals are not counted as part of the supply of Nova Scotia teachers. The concept of teacher supply by subject is further refined in Section 8, where the projected imbalances of teacher demand and supply by subject/specialty and administration are analysed in detail. The importance of the historical distribution of Nova Scotia teacher certification by academic major is the pattern of the distribution over time. Indeed, for most subjects the pattern is relatively stable. The notable exception is physical education where elimination of university teacher physical education programs, following the reorganization of teacher education in Nova Scotia, reduced the opportunity to study in this subject.

Table 21

Academic Majors of Nova Scotia Teacher Certification Recipients

Subject/Specialty	1994	1995	1996	1997	1998	1999	2000
English	95	107	66	110	94	118	89
French	52	51	62	60	39	40	28
Other Languages	1	2	1	4	8	6	4
Social Studies	105	108	90	101	123	96	105
Mathematics	27	28	6	17	11	20	12
Science	74	62	40	54	65	59	60
Biology	54	38	17	38	42	41	43
Chemistry	11	13	9	12	13	12	7
Physics	4	4	7	2	5	6	5
General & Other	5	7	7	2	5	0	5
Physical Education	111	114	99	106	96	30	18
Health Education	1	1	0	0	0	1	0
Fine Arts	32	25	30	34	25	26	13
Music	28	24	27	30	20	21	9
Other	4	1	3	4	5	5	4
Technology Education	11	3	2	1	1	1	4
Business Education	9	9	9	6	6	13	7
Family Studies	10	8	3	6	5	4	4
Other Subjects	348	403	618	365	242	258	258
Total	876	921	726	864	715	672	602

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

7.4 Potential Supply of Teachers of Non-Teaching Holders of Certification

Once possessing an Initital Teacher's Certificate, an individual is qualified to teach in Nova Scotia public education without time limit, even though the requirements for certification have been recently elevated. Prior to November 1992 an individual was certified initially for three years and would become permanent if in that period she/he was engaged as a permanent teacher for two years. Otherwise, the individual would need to apply for a renewal. (Some former certificate holders who did not actively participate in the teacher labour market after 1992 may not be aware that their certification can be renewed, upon application, on a permanent basis.) From 1978, a total of 20,688 individuals received Nova Scotia teaching certificates. In 2000-01, only 12,121, or 58.6%, of these individuals were teaching in Nova Scotia. Many may have moved out of the province, settled into other occupations, or left the labour market. The proportion of non-teaching holders of Nova Scotia teaching certificates who could be enticed to work as teachers is probably very small. Given that over 40% of those holding a teavhing certificate are not employed in the field, an appeal for teachers from this potential source might be successful in alleviating a modest teacher shortage. In assessing the supply of teachers in this *Update* no provision is made for the possibility of non-teaching holders of Nova Scotia teaching certificates re-entering the active teacher workforce.

8. Projected Imbalance of Teacher Demand and Supply by Subject, Specialty, and Administration

8.1 Measuring Projected Imbalances

This Section compares annual estimates of the supply of regular teachers by category, discussed in Section 6, with corresponding projections of demand, Section 7, to obtain a quantitative indication of the subjects and specialties where the outlook is for significant labour market imbalances unless some action is taken. Both the measure of supply and projections of demand are approximations of the future. Therefore, the comparisons are not appropriate for fine-tuning. Nevertheless, there are subjects and specialties where the prospect for major imbalances are clear, and these ought to be addressed. This information should be utilized with other evidence of current and future imbalances elsewhere in this *Update*, and from other sources, to determine if remedial action is, or will be, warranted.

The consequences of oversupply will be the misdirection of teacher education program resources in Nova Scotia institutions, and that prospective teachers will be educated for an occupation in which there is a reduced opportunity to work in the province. There is at least a chance that Nova Scotia-educated teachers who are not employed in Nova Scotia will find suitable teaching work elsewhere. The consequence of shortages, however, is more critical for public education in Nova Scotia, because school boards will have difficulty hiring teachers who are fully prepared to teach the Public School Program in their respective subjects. In specialized areas such as Support Services, a shortage of teachers means that the individualized needs of students may not be attended to in the best manner.

The predominant indicator of annual supply is based on the number of Nova Scotia Initial Teacher's Certificates issued during the year 2000. For some categories, however, supply is measured by the number of new teachers with specialized training or the number of existing teachers upgrading their qualifications in the year 2000. Projected demand is expressed as annual averages for the four-year period 2001-02 through 2004-05, and the five-year period 2005-06 through 2009-10. Multi-year annual averages provide a more stable reference for planning purposes. The two periods highlight those imbalances that should be dealt with in the near-term versus those that need to be corrected at a later date. Further, commencing in August 2005, Initial Teacher's Certificates and Bridging Teacher's Certificates will be assigned endorsations corresponding to the new teachers' respective

undergraduate majors and minors. In 2005-06 and after, many new teachers will be more constrained than previously in the subjects that they teach.

Shown below for the major categories of teachers are new supply for 2000, means by which the supply is measured in this *Update*, and average annual demand by period.

Table 22

Teacher Supply and Projected Demand by Category

	Supply		Average Annual Demand	
Category	Number	Indicator of Supply in 2000	2001-02 through 2004-05	2005-06 through 2009-10
Elementary and Secondary Teachers	524	Initial Teacher's Certificates Issued (subject/specialty endorsation: by teachers undergraduate major and minor)	274	424
Administration	18	Existing teachers completing education administration graduate degree programs	48	72
Student Support Services	26	New teachers with applicable graduate professional training, or existing teachers completing specialized training	35	60

When evaluating gaps in the new supply and projected demand of teachers in a subject/specialty, different criteria may be applied for determining whether an oversupply or shortage represents a problem requiring action. There is a tolerance for an acceptable oversupply, but indications of a shortage warrant greater concern. This concern may extend to thin market segments for teachers where there will be few teachers both supplied and demanded. Although supply may seem adequate in the thin market, there may be no cushion to account for the deficiencies inherent in the data, nor to cover the probable erosion of supply due to recruiting by other jurisdictions.

The availability of qualified teachers for subjects/specialties is more limited where there is the requirement that the language of instruction must be French. This results in additional difficulty for Acadien provincial generally and for other school boards when hiring for their French immersion and extended core French programs. Data are not

currently collected on the number of new teachers who are fluent in French, therefore, it is not possible to provide separate analyses of imbalances for subjects/specialties by language of instruction.

8.2 Projected Imbalances of Secondary and Elementary Teachers

The largest category of teachers is secondary and elementary classroom teachers. These teachers are required to be certified by the Nova Scotia Department of Education. For new teachers in Nova Scotia either the Initial Teacher's Certificate or the Bridging Teacher's Certificate are issued. Within the category of secondary teacher there are a number of subject fields. The new supply and projected demand by subject are shown in Table 23 below. Note that the secondary subjects correspond to the forthcoming endorsation areas, except for personal development/career education for which no academic major or minor discipline has been associated. Also, demand in French, physical education, and fine arts/music has an additional component, shown in italics, for majors in these subjects at the elementary level.

Analysis of Projected Imbalances of Secondary and Elementary Teachers

The following analysis of new supply and projected demand for secondary and elementary teachers considers only the supply subject component indicated by undergraduate academic major. This is the area where a new teacher has the strongest academic background, and presumably, the greatest teaching interest. About one-half of new teachers in the year 2000 had undergraduate minors. It is important to observe that the subject concentrations by undergraduate minor closely parallels that by academic majors. Therefore, including the academic minor endorsations of new teachers does not materially broaden the outlook for teacher availability by subject.

Table 23

Secondary and Elementary Supply and Projected Demand by Subject

	Initial Teaching Certificates Issued in 2000 by Undergraduate:		Projected Average Annual Demand	
	Major	Minor	2001-02 through 2004-05	2005-06 through 2009-10
SECONDARY *	**306**	**152**	**125**	**190**
English	80	45	22	36
French**	22	15	6 *2 elem.*	9 *5 elem.*
Languages	4	3	<0.5	<0.5
Social Studies	90	54	17	26
Mathematics	10	5	18	30
Science	57	22	17	25
Biology	41	12	3	5
Physics	5	5	2	2
Chemistry	6	2	3	4
General & Other Sciences	5	3	9	14
Physical Education**	16	2	6 *2 elem.*	8 *6 elem.*
Fine Arts	13	2	8 *3 elem.*	10 *5 elem.*
Music**	9	-	3 *3 elem.*	4 *5 elem.*
Other	4	-	5	6
Technology Education	4	2	10	11
Business Education	7	2	4	6
Personal Development/Career Ed	NE***	NE***	5	6
Family Studies	3	1	5	7
ELEMENTARY	**218**	**N/A+**	**149**	**234**
TOTAL	**524**		**274**	**424**

Note: Numbers may not add to totals due to rounding.

** Secondary also includes teachers with assignments in both secondary and elementary grades.*

*** Demand for elementary level teachers with a major in this subject shown in italics.*

**** NE: No Endorsation.*

+N/A: Not Applicable.

Secondary Teachers—Oversupply

Considering just academic major endorsations, the outlook is for major **oversupplies** of secondary teachers in the following subjects (note that with Biology and French there could be mitigating circumstances):

English and social studies are oversupplied in both projection periods. These two subjects constitute 56% of the total secondary subject new supply of teachers but only 31% of projected demand in 2001-02 through 2004-05, and 33% in 2005-06 through 2009-10.

Biology is also oversupplied in both projection periods. With a new supply of 41, biology has projected average annual demand of 3 in 2001-02 through 2004-05 and of 5 in 2005-06 through 2009-10. The oversupply of biology teachers might be offset somewhat if they are capable of teaching general and other sciences, where the outlook suggests shortages.

French seems to be oversupplied in both periods. The new supply of French teachers is 22 per year compared to projected demand of 8 in 2001-02 through 2004-05, and 14 in 2005-06 through 2009-10. The situation regarding the need for teachers with an academic major in French is clouded by the general problem of finding teachers who are fluent in French to teach a number of subjects in French speaking schools and French second language programs, both of which compete for the same pool of teachers. Depending on their academic minor qualifications, new teachers with French majors may be utilized to teach other secondary subjects or to teach at elementary grades.

Secondary Teachers—Shortage

Considering just academic major endorsations, the outlook is for significant **shortages** of secondary teachers in the following subjects:

Mathematics will be significantly under supplied, with a new supply of 10 per year compared to average annual demand of 18 in 2001-02 through 2004-05, and 30 in 2005-06 through 2009-10. Compounding this outlook may be an additional need for mathematics teachers with the forthcoming introduction of a new pre-calculus high school mathematics course.

Technology education will be under supplied, with a new supply of 4 and an average annual demand of 10 and 11 in the two projection periods. Technology education as a subject of study is in transition. Technology education courses currently encompass the diverse fields of construction, electrical, energy, production, communication, and information technology, which complicates the formulation of solutions to remedy the projected shortage. Many schools, however, will require upgrading to their facilities before a contemporary version of technology education can be delivered.

Elementary Teachers—Oversupply and Shortage

The outlook for elementary teachers, with a new supply of 218, is for oversupply in 2001-02 through 2004-05, when the demand is projected to average 149 per year, and for a shortage in 2005-06 through 2009-10 with projected annual demand of 234. There is a possibility, however, that the shortage in the latter period may be met by a continuing oversupply of teachers with academic backgrounds in secondary endorsation subjects.

8.3 Projected Imbalances of Administrative and Support Services Teachers

The new supply and projected demand for teachers involved in administration and in student support services are shown in the table below.

Table 24

Administration and Student Support Services Supply and Projected Demand

		Projected Average Annual Demand	
	Supply in 2000	2001-02 through 2004-05	2005-06 through 2009-10
Administration	18	48	72
Education Support	13	4	7
Speech Therapy	7	4	6
Testing Services	5	<0.5	<0.5
Social Work	1	<0.5	1
Guidance	9	8	12
Special Education/Resource	4	23	41
TOTAL	**43**	**83**	**132**

Analysis of Projected Imbalance of Administration

Administrators include the positions of superintendent, assistant superintendent, supervisor, system consultant, principal, vice-principal, and department head. Some of these positions may have both administrative and teaching responsibilities, e.g., department heads, vice-principals, and principals. In 2000-01, for example, 1,212 administrators contributed 866.9 FTEs of administration activity. The majority of administrators come from the ranks of classroom teachers. Other than regular Nova Scotia teacher certification, there is no additional formal requirement nor endorsation for administration. Training in education administration, however, is available in Nova Scotia at the graduate degree level.

Based on the number of teachers/administrators completing graduate degrees in education administration in the year 2000, the outlook is for a serious shortage of qualified administrators, with an annual new supply of 18 compared to projected demand of 48 in 2001-02 through 2004-05, and 72 in 2005-06 through 2009-10. Even though the number of teachers/administrators completing graduate degrees in education administration is scheduled to increase to the level of 20 to 25 per year, the data suggest that a shortage will occur. There are, however, other avenues for training in education administration available in Nova Scotia that could significantly add to new supply. These include programs arranged between school boards and local universities. Acadia University has 20 teachers registered in its Leadership and School Development program; Mount Saint Vincent University has accepted 44 teachers into a Master of Education Curriculum/Leadership program in conjunction with the Halifax School Board. Further, all school boards utilize the various modules offered by the Nova Scotia Leadership Consortium. Over 1,000 teachers are registered with the Consortium.

Analysis of Projected Imbalances of Education Support Teachers

Education support consists of the non-classroom specialist activities of speech therapy, testing services, and social work. Completion of an approved teacher education program is not required to work in these areas, nor is regular teacher certification. Rather, a restricted teaching certificate is issued by the Department of Education, which allows for work only in the applicable field. The qualification for restricted certification is usually a masters degree in the respective discipline. Education at the masters degree level is available from universities in Nova Scotia.

Table 25

List of Unfilled Positions by Board

Specialist/School Board	Number of Unfilled Positions
Speech Language Pathology/Speech Therapist:	
Cape Breton-Victoria	1
Chignecto-Central	1
Acadien provincial	2
Testing Services/Psychologist:	
Chignecto-Central	1 (part-time, 0.5 FTE)
Acadien provincial	2

New supply in Education Support is low, as is the projected annual demand. It is likely, however, that the annual demand for teachers in speech therapy and testing may be substantially greater than that projected. School board and NSTU officials advise that teachers in these specialties are also in demand by health services and are lured by private practice, making recruitment difficult and, once hired, leads to their high rate of attrition from public education. Further, there is currently a backlog of demand in speech therapy and testing. At the request of the Department of Education, school boards reported unfilled positions as of November 2001 (see Table 25).

Analysis of Projected Imbalances of Guidance Counselors

Guidance counselors are required to hold regular teacher's certification and usually have completed specialized education in guidance. Guidance counselors most often start their careers as classroom teachers. Training for guidance counseling is available in Nova Scotia at both the diploma and masters degree levels.

With a supply of 9 and a projected demand of 8 in 2001-02 through 2004-05, and 12 in 2005-06 through 2009-10, there is the risk of a shortage in both periods.

Analysis of Projected Imbalances of Special Education/Resource Teachers

Special education/resource teachers provide assistance to students with special needs. They may have classroom and individualized service responsibilities. There is no distinction between elementary and secondary focus of activity. Special education/resource teachers are required to have regular teaching certification and usually have additional training at the masters degree or diploma level. Special education/resource teachers generally start as regular classroom teachers then transfer to the area. Education at the masters degree and diploma level is available in Nova Scotia.

The outlook for special education/resource teachers is for serious shortages. New supply in 2000 was only 4, compared to average annual demand of 23 in 2001-02 through 2004-05, and 41 in 2005-06 through 2009-10.

9. The Substitute Teacher Labour Market in Nova Scotia—Survey of School Principals Regarding the Availability of Substitute Teachers

9.1 Background and Need for the Survey

Substitute teachers provide a valuable service by taking over the classroom duties of regular (including term) teachers while they are absent from work, usually for a short period. The task of finding qualified substitute teachers can take considerable time for principals or other members of schools' administration. When qualified substitute teachers cannot be found, the education of students is adversely affected.

The difficulty in finding substitute teachers was mentioned in anecdotal accounts reported in the *Research Paper*. The labour market for substitute teachers was extensively investigated in the *Research Paper* and is updated with more recent data in Section 10 of this *Update*. As noted previously in Section 2.2 (and Appendix B), there are indications that schools in Canada are having increasing difficulty finding qualified substitute teachers.

To obtain first-hand information on the current situation regarding the ability of schools in Nova Scotia to engage substitute teachers, in June of 2001 the Department of Education conducted a survey of all school principals.

9.2 Process for Engaging Substitute Teachers

Prospective substitute teachers apply to the board to be listed. The board examines the qualifications, including teacher certification, of every applicant to determine his/her eligibility for substitute teaching positions and prepares a list. School officials are responsible for contacting the substitute teacher and arranging for the assignment. A prospective substitute teacher may separately apply to more than one board, and be accepted on multiple lists.

9.3 Scope of the Survey of School Principals and Response Rate

In June 2001 the Department of Education surveyed school principals regarding their schools' ability to find substitute teachers during the 2000-01 school year. The specific purpose of the Department of Education survey was to determine

- the extent to which schools in Nova Scotia are having difficulties finding qualified substitute teachers
- whether it is now easier or more difficult to find substitute teachers than in the past; the reference point was two years ago
- the reasons for a school's difficulties in finding substitutes

The survey also solicited other comments from the principals regarding substitute teachers. A copy of the survey document is in Appendix D.

The survey was mailed to principals at all public schools in Nova Scotia in June 2001. Although this was a relatively busy time for principals, with preparations for the end of the school year, 314 responses were received representing a total response rate of 69%. The number of schools surveyed and the number of responses received, by school board, are shown below:

Table 26

Principals Survey Response Rate

School Board	Number of Schools	Number of Responses	Response Rate
Nova Scotia Total	**452**	**314**	**69%**
Cape Breton-Victoria	64	46	72%
Strait	30	21	70%
Chignecto-Central	88	61	69%
Halifax	143	89	62%
Annapolis Valley	42	31	74%
Southwest	64	49	77%
Acadien provincial	21	17	81%

Although approximately 30% of the schools did not respond, it is unlikely that they had significantly different experiences in finding substitute teachers than did the responding schools. Given the relatively high return rate of the survey and the consistency of the responses, it is reasonable to conclude that the replies of the responding schools are representative of all schools—both provincially and by school board.

9.4 Problems Finding Qualified Substitutes by Subject/Specialty and by School Board

Structure of the Survey

The information collected is qualitative and provides the principal's assessment of the degree of difficulty in finding **qualified** substitute teachers in seventeen subject/specialty areas. To be qualified, a substitute would need to hold a Nova Scotia Teacher's Certificate and have an academic major or minor (or equivalent) in the respective subject/specialty area. On the survey form principals had the option of responding for each subject/specialty that

a) the subject/specialty was not taught in the school (therefore finding a substitute teacher would not be an issue)
b) substitute teachers were not needed although the subject/speciality was taught (as above, finding a substitute teacher would not be an issue)
c) generally qualified substitute teachers could be found **without undue difficulty**
d) generally qualified substitute teachers could be found **only after considerable effort**
e) **often** qualified substitute teachers **could not be found**

In approximately 20% of the detailed survey responses for subjects/specialties, the principals marked both options **d** and **e** for substitute teacher availability. This indicated that while their schools could generally find qualified substitutes teachers after considerable effort, often a qualified substitute could not be found. For consistency of interpretation in the following analysis of survey results, only the **e** response was considered in cases where both **d** and **e** were marked.

Survey Results by Subject Specialty

Table 27 presents the tabulation of the responses by subject/specialty for Nova Scotia. The results are clear that many schools had significant problems finding qualified substitute teachers. The least troublesome subjects/specialities in this regard were English (where 57.0% of schools could generally find qualified substitutes without undue difficulty) and Social Studies (56.1%). At the other extreme there were a number of subjects where over half of the schools reported that they often could not find qualified substitute teachers. These subjects were physics (76.9% of schools often could not find qualified substitutes), other languages (73.3%), chemistry (71.4%), French first

language (67.9%), technology education (67.5%), French second language (63.1%), other elementary (62.1%), fine arts (56.8%), and biology (54.8%). With most of the other subjects/specialties, if schools could find a qualified substitute teacher, it was generally with considerable effort.

Table 27

Survey of School Principals Availability of Substitute Teachers in 2000-01
Summary Tabulation for Nova Scotia by Subject/Specialty

		Ability of a School to Find Qualified* Substitute Teachers		
Subject/Specialty	Responding Schools Hiring Substitutes	Generally Without Undue Difficulty	Generally Only After Considerable Effort	Often Could Not Find Qualified Substitute
NOVA SCOTIA	Number	%	%	%
Secondary				
English First Language	121	57.0	33.9	9.1
French First Language	53	3.8	28.3	67.9
French Second Language	122	6.6	30.3	63.1
Other Languages	15	0.0	26.7	73.3
Social Studies	123	56.1	36.6	7.3
Mathematics	130	21.5	42.3	36.2
Biology	62	14.5	30.6	54.8
Physics	65	0.0	23.1	76.9
Chemistry	63	1.6	27.0	71.4
Other Sciences	99	25.3	43.4	31.3
Physical Education	124	23.4	37.9	38.7
Fine Arts	95	10.5	32.6	56.8
Technology Education	123	5.7	26.8	67.5
Family Studies	108	20.4	34.3	45.4
Other Secondary Subjects	50	30.0	40.0	30.0
Elementary				
General	212	31.6	58.0	10.4
Other	145	2.8	35.2	62.1

** A qualified teacher would have an academic major or minor (or equivalent) in the subject/speciality.*

Survey Results by School Board

Table 28 summarizes the survey findings by school board. Comparing the average proportion of schools that often could not find qualified substitute teachers for all subjects/specialties, the Chignecto-Central school board had the greatest difficulty in finding qualified substitute teachers. Half (50.5%) of Chignecto-Central schools reported that, on average for all subjects/specialties combined, they often could not find

qualified substitute teachers. Nearly as high in this regard was Southwest (49.3%), and Acadien provincial (48.0%). Cape Breton-Victoria had the least difficulty, at 23.5%. At the provincial level, encompassing all schools, 41.6% of schools reported that they often could not find qualified teachers for a given subject/speciality.

Table 28

Survey of School Principals Availability of Substitute Teachers in 2000-01
Summary Tabulation For Nova Scotia and School Boards

School Boards Subject/Specialty	Responding Schools Hiring Substitutes	Ability of a School to Find Qualified* Substitute Teachers *Averages for All Subjects/Specialities in School Hiring Substitues Teachers*		
		Generally Without Undue Difficulty	Generally Only After Considerable Effort	Often Could Not Find Qualified Substitute
	Number	%	%	%
Nova Scotia	314	21.3	37.0	41.6
Elementary		19.9	48.7	31.4
Secondary		21.7	33.9	44.3
Cape Breton-Victoria	46	42.3	34.3	23.5
Elementary		31.4	47.1	21.6
Secondary		45.7	30.2	24.1
Strait	21	29.6	31.4	39.0
Elementary		50.0	31.3	18.8
Secondary		27.3	31.5	41.3
Chignecto-Central	61	13.5	36.0	50.5
Elementary		18.1	43.1	38.9
Secondary		12.1	33.9	54.0
Halifax	89	19.8	41.0	39.2
Elementary		17.2	56.6	26.3
Secondary		20.6	36.7	42.8
Annapolis Valley	31	20.4	39.5	40.1
Elementary		18.6	53.5	27.9
Secondary		21.0	34.7	44.4
Southwest	49	19.7	31.0	49.3
Elementary		14.3	44.6	50.0
Secondary		21.1	27.5	51.4
Acadien provincial	17	5.4	46.5	48.0
Elementary		5.0	50.0	45.0
Secondary		5.5	45.8	48.6

** A qualified teacher would have an academic major or minor (or equivalent) in the subject/speciality.*

9.5 Trend in Ability of Schools to Find Qualified Substitute Teachers

The school principals were asked the following questions in the survey:

> During the past two years, has the ability of your school to attract qualified candidates for substitute teachers been generally ...
>
> - significantly easier
> - significantly more difficult
> - about the same

Principals of 310 schools responded to this question. The results by school board are shown below.

Table 29

Ability to Find Qualified Substitutes During Past Two Years

School Board	Number of Responses	Significantly Easier	Significantly More Difficult	About the Same
Nova Scotia Total	**310**	**2**	**242**	**66**
Percent		*0.6%*	*78.1%*	*21.3%*
Cape Breton-Victoria	46	0	34	12
Strait	21	0	19	2
Chignecto-Central	61	0	56	5
Halifax	87	0	56	31
Annapolis Valley	30	0	24	6
Southwest	48	2	39	7
Acadien provincial	17	0	14	3

In only two instances did principals report that finding substitute teachers had become easier during the previous two years. Just over one-fifth (21.3%) of the principals indicated that the situation was about the same. The overwhelming majority (78.1%), however, reported that it had become significantly more difficult. The Chignecto-Central School Board had the highest proportion of schools reporting significantly more difficulty, at 91.8%. This was followed by the Strait (90.4%), Acadian Provincial (82.4%), Southwest (81.3%), Annapolis (80%), Cape Breton-Victoria (73.9%), and Halifax (64.4%).

9.6 Reasons for a Shortage of Substitute Teachers and Other Comments

The survey requested principals to provide open-ended (written) comments on the survey form in response to the following question:

> If your school has experienced more difficulty [finding qualified substitute teachers], why has this occurred?

Further, the principals were asked for their open-ended comments on the topic of substitute teacher availability generally.

The written responses of the principals often reiterated common themes. The frequency of occurrences of these themes is presented in Table 5-A, Appendix A, and provides insight into the nature of the problems that many of the schools had in finding qualified substitute teachers. When interpreting this information, it should be noted that open-ended responses generally **underestimate** the breadth of sentiment about a viewpoint. If prompted by a specific survey question, it is expected that more principals would indicate that they hold the same particular views, than would be conveyed in an open-ended response.

Interpreting the most commonly mentioned themes suggest the following reasons for the difficulty in obtaining substitutes:

- Many previously available substitutes were no longer available because they had been hired as permanent, term, or long-term substitute teachers.
- Substitute teachers (or potential substitutes) were working outside of Nova Scotia or had left the profession.
- The earnings, or pay rate, of substitute teachers was too low to make substituting worthwhile.
- In many cases it is too costly for substitute teachers to travel to a school; this is compounded for schools in rural and isolated regions.
- The demand for substitute teachers is increasing; regular teachers are absent more frequently due to illness or stress.
- Provincial or system-wide professional development days create a significant problem in finding substitute teachers, because many schools concurrently have the need for substitutes in the same subject/specialty.

Twenty-eight of the principals recorded in their comments the number of calls sometimes needed to find a substitute teacher. The lowest number recorded was 15 calls, the highest was 150, and the average was 49.

10. The Substitute Teacher Labour Market in Nova Scotia—Data Analysis

10.1 Analysis of Available Labour Market Data on Substitute Teachers

Table 30 summarizes information on the substitute teacher labour market from 1994-95 through 2000-01. The information includes

- number of teachers **teaching only as substitutes** in Nova Scotia public education during the year, as a measure of the size of the substitute teacher workforce (Substitute teachers who also had assignments as probationary/permanent or term teachers in the year are not included in this figure. Also excluded are prospective substitute teachers who were not able to find substitute work.)
- the average and median number of days of teaching of the substitute teacher workforce
- profile of substitute teachers' **previous-year** teaching activity in Nova Scotia public education to indicate the source of substitute teacher workforce
- profile of substitute teachers' **next-year** teaching activity to indicate the ability of substitute teachers to obtain regular teaching assignments, and to highlight the attrition of substitute teachers from public education in Nova Scotia

Size and Importance of the Substitute Teacher Workforce

The number of substitute teachers working in Nova Scotia has remained essentially unchanged from 1994-95 through 2000-01. In 2000-01, there were 2,258 active substitute teachers; the highest number was 2,392 in 1995-96 and the lowest was 2,176 in 1997-98. Generally, substitutes teach less than one-third of the 195-day school year. Although there was a trend of increasing number of days taught from 1994-95 through 1998-99, when the average number of days per year went from 45 to 61, since 1998-99 the number of days per year has remained relatively constant in the range of 60 to 62. The average number of days of teaching for substitutes in 2000-01 was 60; the median was 45. Assuming that substitute teachers would prefer to work the equivalent of a regular teacher work load, as a group substitute teachers in 2000-01 were engaged at only 31% of their capacity.

Table 30

Nova Scotia Substitute Teacher Labour Market

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Substitute Teachers	2,382	2,392	2,338	2,176	2,195	2,324	2,258
Average Number of Days Taught	45	47	50	53	61	62	60
Median Number of Days Taught	28	32	35	40	46	53	45
Previous Year Teaching Activity							
Probationary/Permanent	116	50	44	51	95	13	29
Term	102	172	121	106	72	159	134
Substitute	1,378	1,380	1,364	1,280	1,163	1,380	1,423
Did Not Teach in Nova Scotia Public Education	786	781	809	739	865	772	769
Next Year Teaching Activity							
Probationary/Permanent	44	52	22	97	21	21	-
Term	299	421	451	383	291	291	-
Substitute	1,394	1,360	1,271	1,163	1,380	1,376	-
Did Not Teach in Nova Scotia Public Education	645	559	594	533	503	636	-
Substitute Teacher Attrition Rate	*27%*	*23%*	*25%*	*24%*	*23%*	*27%*	-

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

Based on the number of substitute teachers and the average number of days taught, the FTE for substitute teacher work effort can be estimated. The growing relative importance of the substitute teacher contribution to Nova Scotia public education is evident below, showing the FTE input of substitute teachers in comparison with that of regular teachers.

Table 31

Substitute FTEs Compared to Regular Teacher FTEs

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Substitute Teacher FTEs	550	557	599	591	687	739	695
Substitute FTEs as a % of Regular Teacher FTEs	5.6%	5.9%	6.0%	6.3%	7.1%	7.7%	7.4%

From 1998-99 through 2000-01, the proportionate contribution of substitute teachers, as compared to regular teacher FTEs, increased steadily from 5.5% in 1994-95 to 7.7% in 1999-00, and dipped slightly to 7.4% in 2000-01.

Source of Substitute Teachers

The source of substitute teachers is assessed by their attachment to Nova Scotia public education in the previous year. The pattern from 1994-95 through 2000-01 has been relatively stable. Of the 2,258 substitute teachers in 2000-01, during the previous year,

- 1,423 (63.0%) were substitutes
- 134 (5.9%) were term teachers
- 29 (1.3%) were probationary or permanent teachers; 25 of these were former permanent teachers, presumably retired from regular teaching, and 4 were probationary teachers
- 769 (34.1%) did not teach in Nova Scotia public education (According to the estimate of supply of teachers (Section 7.1), as many as 526 of these substitutes could be accounted for by new entrants to the public education labour market. The remainder may be former teachers, substitutes or otherwise, who were not active in teaching in 1999-00.)

Retention of Substitute Teachers in the Nova Scotia Public Education Workforce

The latest year that retention information is available is for teachers working as substitutes in 1999-00. The "Next Year Teaching Activity" refers to their teaching in Nova Scotia public education in 2000-01. The pattern of next-year-teaching has been similar for 1994-95 through 1999-00. Of the 2,324 substitute teachers working in 1999-00, in 2000-01,

- 21 (0.9%) became probationary/permanent teachers
- 291 (12.5%) became term teachers
- 1,376 (59.2%) remained as substitutes
- 636 (27.4%) did not teach in Nova Scotia public education (This represents an attrition rate of 27.4%, which is consistent with previous years.)

The attrition of substitute teachers is significant. Presented below is the number of substitute teachers leaving Nova Scotia public education in relation to new supply from 1994-95 through 1998-99. For this period, attrition was comparable to 90% of the new supply of teachers.

Table 32

Comparison of Loss of Substitute Teachers with New Supply of Teachers

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	Total
Loss of Substitute Teachers (i.e., did not teach in next year)	645	559	594	533	503	636	3,470
Estimated New Supply of Teachers	681	757	634	736	482	586	3,876
Loss of Substitute Teachers as a % of New Supply	*95%*	*74%*	*94%*	*72%*	*104%*	*109%*	*Average 90%*

The causes of the high attrition of substitute teachers seem evident: low earnings, and limited prospect for a regular teaching assignment.

Low Earnings

Although the rate of pay for substitute work, currently $114 to $140 per day, is commensurate with the daily rate of earnings in other Nova Scotia industries (refer to Section 3.2), the number of days of available substitute teaching work is typically very small. As noted above, in 2000-01 substitute teachers averaged only 60 days of work. The average annual income from substitute teaching in this year would be $6,840, which is inadequate by itself to sustain even a minimal standard of living.

Limited Prospect for Regular Teaching Assignment

Substitute teachers who are willing and able to endure a period of extremely low earnings in the hope of eventually attaining a regular teaching position are likely to be disappointed. The probability of a substitute becoming a regular teacher within even three years has been very low. For example, the experience of the 2,176 substitute teachers in 1997-98 in obtaining probationary/permanent employment and term employment is shown below.

Of the substitute teachers in 1997-98, after three years only 6.9% had become probationary/permanent teachers and 16.4% were working as term teachers.

Table 13

Three Year Work History of Substitute Teachers in 1997-98

"Future" Regular Teacher Status of the 2,176 Substitute Teachers Active in 1997-98	1998-99 One Year Later	1999-00 Two Years Later	2000-01 Three Years Later
Probationary/Permanent	97 (4.5%)	122 (5.6%)	151 (6.9%)
Term	383 (17.6%)	387 (17.8%)	357 (16.4%)

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education

10.2 School Board Substitute Teacher Profile

Table 34 provides a profile of substitute teachers by school board with respect to the percentage of substitute teachers to all teachers, and the age distribution of the substitute teachers. These two characteristics differ notably among the school boards, implying varying dependence on substitute teachers and differences in the composition of their substitute teacher workforces. As a proportion of all teachers employed by the school boards, substitutes comprise from a low of 18.1% at Halifax to a high of 25.6% at Acadien provincial. The average provincially was 18.6%.

Table 34

Substitute Teachers Profile by School Board, 2000-01

	Cape Breton-Victoria	Strait	Chignecto-Central	Halifax	Annapolis Valley	Southwest	Acadien provincial	Nova Scotia
Substitute Teachers	347	203	381	790	314	275	112	2,258
Substitutes as a % of All Teachers	20.0%	23.1%	18.5%	18.1%	22.7%	19.3%	25.6%	18.6%
Age Distribution of Substitute Teachers								
20 to 29 years	42.6%	34.0%	33.6%	41.8%	32.1%	24.0%	17.3%	36.1%
30 to 39 years	14.1%	25.1%	20.8%	22.8%	23.8%	17.0%	27.5%	20.7%
40 to 49 years	19.0%	20.6%	27.5%	17.2%	20.8%	22.8%	13.0%	20.4%
50 to 59 years	20.2%	17.1%	16.6%	16.1%	19.8%	32.4%	39.2%	19.7%
60 years and over	4.2%	3.1%	1.6%	3.1%	3.4%	3.7%	2.8%	3.0%

Source: Research and Statistics, Corporate Policy, Nova Scotia Department of Education
Note: Total substitute teachers by school board is greater than the number for Nova Scotia because some substitute teachers worked for multiple school boards in a year.

Substitute teachers tend to be younger at the Cape Breton-Victoria and Halifax regional school boards, where 42.6% and 41.8% of the substitute teachers respectively are less than 30 years old. Acadien provincial has the highest concentration of older substitute teachers, with 42.0% age 50 or older. The youngest substitute teachers are inclined to be more occupationally and regionally mobile, but the oldest are more prone to retirement.

10.3 Substitute Teacher Utilization and Seasonality by School Board

The Department of Education surveyed school board human resource officials in November 2001 concerning the seasonality of substitute teacher utilization by month. The results of this survey for 2000-01 are presented in Table 6-A, Appendix A. The definition of substitute teacher in this survey was broader than elsewhere in this *Update*, because it may include substitute teachers who also worked in the year in a regular teaching position. (For the All School Boards total, substitutes who worked for more than one school board would be counted more than once.) The number of teaching days reported, however, relates only to substitute teaching. There is considerable variation between school boards in the average days worked by substitute teachers. The range is from 30.7 days at Acadien provincial to 82.6 days at the Halifax Regional School Board. This corresponds to average annual earnings from substitute teaching of approximately $3,500 at the Acadien provincial to $9,400 at the Halifax Regional School Board.

The pattern of monthly seasonal variation substitute teacher utilization is similar amongst the school boards. The lowest utilization is in September. In part this is due to the fewer number of school days in this month. The highest utilization is during the ending months of the school year: April, May, and June, depending on school board. Unfortunately, the lowest demand for substitute teachers is at the beginning of the school year when most of the otherwise unemployed new teachers would be available. Conversely, the highest demand is later in the year after many new teachers have either left the region or found other employment. As an index of seasonality, the ratio of number of substitute teachers engaged in the highest and lowest utilization months by respective school board is shown below.

Table 35

Ratio of Highest to Lowest Months of Substitute Teachers

Cape Breton-Victoria	Strait	Chignecto-Central	Halifax	Annapolis Valley	Southwest	Acadien provincial	All School Boards
2.8	2	1.3	1.5	1.5	1.4	1.7	1.5

10.4 Problem of Substitute Teacher Availability

Schools require substitute teachers to be available to fill in for regular teachers who are temporarily absent. The absences are sporadic and, in total, vary considerably from month to month and day to day. The amount of work available is not sufficient to sustain a regular substitute teacher workforce. Further, the low prospect of obtaining regular teaching work with substantially higher earnings discourages many substitute teachers from continuing to be available. A possible solution of continually flooding the teacher workforce with new graduates in the hope of retaining some for substitute teaching, if only for a short time, is self-defeating because it promotes attrition. The dilution of substitute work among more substitute teachers increases the incentive for attrition resulting in fewer substitute teachers being available. This is the paradox.

The key to promoting the availability of substitute teachers, and to encourage their retention, is to increase their

- earnings by substantially increasing the number of days that they work
- chances for obtaining regular teaching work, as an incentive to remain in the Nova Scotia teacher workforce while substituting

Measures that would be appropriate in this regard follow:

- Align the academic backgrounds of new teachers with the demand for regular teachers in the school system. This will improve the number of qualified teachers available to fill the subject/specialty requirements of substitute work, as well as improve their potential to eventually be employed as regular teachers.
- Reduce the monthly variation in substitute teacher utlization by better co-ordinating planned days off for teachers. A number of the principals responding to the survey, discussed in Section 9, noted that provincial or system-wide professional development days create a significant problem in finding substitute teachers, because many schools concurrently have the need for substitutes in the same subject/specialty.
- Enhance the number of opportunities for substitutes to teach through better dissemination of information and school board cross-listing of substitute teacher credentials. Information on the availability of substitute teachers willing to work and on availability of possible positions for them is currently fragmented and unorganized. Thus, school principals are often not readily aware of qualified substitute teachers who would be available to work. It is technically possible for there to be an on-line Internet registry of substitute teachers to which principals may refer to locate qualified

substitutes who are currently available and are willing to work at their respective schools. The effectiveness of such a registry would be significantly enhanced if substitute teachers approved by one board would, as a matter of course, be accepted by the other boards. Cross-listing would increase the potential number of substitute teachers to fill an assignment.

- Encourage substitute teachers to travel to take assignments in schools that are farther away. School principals observed travel as a disincentive for substitutes to take assignments, especially in remote schools. If excessive travel costs were offset when substitute teachers need to travel to take assignments, the effective availability of substitutes to schools would be enhanced and substitutes would be encouraged to take more work.

11. Integrated View of Regular and Substitute Teacher Demand and Supply in Nova Scotia

An integration of the dynamics of demand and supply for regular and substitute teachers is depicted in Table 36. The table synthesizes information elsewhere in this *Update* into a model of the overall teacher workforce in Nova Scotia, that combines new supply and the demand for regular and substitute teachers. The operation of the model is as follows:

- The supply of new teachers feeds the need for both the regular and substitute components.
- The linkage between regular and substitute teacher workforce components is that many new teachers start their careers as substitutes with the intention and incentive of becoming full-time teachers. The substitute labour market is a funnel through which the supply of many new teachers must go.
- The number of teachers available to fill regular teaching positions in any period is the sum of new supply and the existing pool of substitute teachers (or a significant portion thereof).
- The size of the pool of substitute teachers is increased by the amount of new supply and decreased by the number of regular teachers demanded.
- The substitute teacher pool is subject to attrition that reduces its size during a year. Attrition is considered to be
  - inversely related to capacity utilization of the pool (i.e., average substitute teacher earnings increase with higher utilization, resulting in lower attrition, and vice versa)
  - directly related to the probability of a member of the pool becoming a regular teacher (This probability is related to the demand for new teachers compared to the size of the substitute teacher pool.)

Implicitly, the results of the model in Table 36 assume that the labour market components for regular and substitute teachers are operating effectively. This means that

- school boards in Nova Scotia are successful in recruiting teachers from the new supply, and that all of the projected supply will be available to teach, either in regular or substitute positions, in Nova Scotia public education

Table 38

Projected Nova Scotia Regular and Substitute Teacher Workforce (FTE) Dynamics

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Regular Teacher Demand Components:									
Retirements	171	304	411	449	535	520	534	473	3,397
Other Attrition	170	170	170	170	170	170	170	170	1,360
Change in Teachers Employed	-66	-73	-88	-91	-96	-115	-140	-137	-805
Total Regular Teacher Demand	**275**	**401**	**493**	**528**	**609**	**575**	**564**	**506**	**3,952**
Teachers Available to Meet Demand for Regular Teachers:									
Beginning Substitute Teacher Pool	1,993	1,723	1,474	1,276	1,141	999	897	810	
New Teacher Supply	520	520	520	520	520	520	520	520	
Total Teachers Available	2,513	2,243	1,994	1,796	1,661	1,519	1,417	1,330	
Meet Regular Teacher Demand	-275	-401	-493	-528	-609	-575	-564	-506	
Effective Substitute Teacher Pool	2,238	1,842	1,501	1,268	1,052	944	853	824	
Attrition of Substitute Teachers	515	368	225	127	53	47	43	41	
Attrition Rate %	23%	20%	15%	10%	5%	5%	5%	5%	
Next-Year Beginning Substitute Pool	1,723	1,474	1,276	1,141	999	897	810	783	
Substitute Teacher Metrics:									
Estimated Substitute Teacher Requirement at 10% of Regular Teachers	924	916	908	898	889	877	863	850	
Effective Substitute Teacher Capacity Utilization	41.3%	49.7%	60.5%	70.8%	84.5%	92.9%	101.2%	103.2%	
Teachers Available Probability for a Regular Teaching Position in Current Year	10.9%	17.9%	24.7%	29.4%	36.7%	37.9%	39.8%	38.0%	

Note: FTE refers to Full-Time Equivalent
Numbers may not add to totals due to rounding.

- teachers in the new supply have the academic backgrounds to qualify them for the subjects/specialties demanded (This factor will be even more important when endorsation is added to the teaching certification of new teachers effective in August 2005.)
- teachers are aware of the opportunities for them to work in Nova Scotia public education, and that they are willing to move where the jobs are offered (For substitute teachers, this means that there is a way for them to be readily hired for openings as they arise and that they are not unduly deterred from taking them because of the expense of travel.)

The model is tailored in Table 36 to current and projected conditions in the Nova Scotia teacher workforce. Critical to the results are assumptions about the response of the substitute teacher attrition rate to changes in substitute teacher utilization and to the probability of substitutes attaining regular teaching employment. A floor of 5% is assumed for the attrition rate of substitute teachers, even under the most desirable conditions.

The outlook resulting from the model is that the size of the effective substitute teacher pool will decline from 2,238 in 2002-03, to 824 in 2009-10. This will not likely be sufficient to meet the demand for substitute teachers in peak periods, and will not be adequate to cover a 10% absentee rate of regular teachers. Under these conditions, an increase in the supply of teachers by targeted growth of teacher education programs in Nova Scotia will be warranted. The increase, however, should not be so large that it triggers an increase in attrition, which will be counterproductive.

In any case, if other remedial action is not taken to improve the effectiveness of the teacher labour markets, then the model will predict a continuation, or worsening, of current problems. That is concurrent oversupply and shortages of qualified teachers (both regular and substitute) depending on subject/specialty and region, and the erosion of supply through attrition of underutilized substitute teachers.

APPENDICES

Appendix A—Detailed Tables

Table 1-A

Projected Enrolments by Grade Level and Estimated Teacher Full-Time Equivalents (FTEs) for Nova Scotia

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Change
Enrolments										
Elementary	78,555	75,831	73,908	72,064	70,041	68,003	66,184	64,201	62,920	-15,635
Junior High	36,997	37,474	37,395	36,753	35,801	34,660	33,807	33,251	32,268	-4,729
Senior High	38,374	38,051	37,496	37,259	37,540	37,998	37,598	36,660	35,541	-2,833
Total	153,926	151,356	148,799	146,076	143,382	140,661	137,589	134,112	130,729	-23,197
Students Per Teacher FTE										
Elementary	18.1	17.9	17.8	17.6	17.5	17.3	17.1	17.0	16.8	-1.3
Junior High	17.2	17.1	16.9	16.8	16.6	16.5	16.3	16.2	16.0	-1.2
Senior High	19.7	19.5	19.4	19.2	19.0	18.8	18.7	18.5	18.3	-1.4
Administrators	177.4	175.9	174.3	172.8	171.3	169.7	168.2	166.6	165.1	-12.3
Teacher FTEs										
Elementary	4,337	4,228	4,158	4,092	4,014	3,934	3,865	3,785	3,745	-592
Junior High	2,150	2,198	2,213	2,194	2,157	2,107	2,074	2,059	2,017	-133
Senior High	1,947	1,949	1,938	1,943	1,976	2,018	2,016	1,984	1,942	-5
Administrators	867	861	854	845	837	829	818	805	792	-75
Total	9,301	9,235	9,162	9,074	8,984	8,888	8,773	8,633	8,496	-805
Annual FTE Change										
Elementary	-113[P]	-109	-70	-66	-78	-80	-69	-80	-40	
Junior High	-8[P]	48	15	-19	-38	-50	-33	-15	-42	
Senior High	-8[P]	2	-11	5	33	43	-3	-32	-42	
Administrators	-14[P]	-6	-7	-8	-8	-8	-11	-13	-13	
Total	-143	-66	-73	-88	-91	-96	-115	-140	-137	

P - Preliminary

Table 2-A

Estimated Number of Retirements (with Pension) by School Board FTEs

School Board	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Total
SCENARIO A - Earliest Unreduced Pension										
Cape Breton-Victoria	36	50	86	99	106	89	104	93	57	720
Strait	14	19	31	40	46	36	30	27	35	278
Chignecto-Central	22	38	47	58	61	88	74	81	69	538
Halifax	79	94	170	189	168	216	189	201	166	1,472
Annapolis	15	22	35	46	50	54	52	61	52	387
Southwest	15	26	32	52	50	74	60	62	56	427
Acadien provincial	4	4	8	12	18	16	10	18	11	101
Nova Scotia Total	185	253	409	496	499	573	519	543	446	3,923
SCENARIO B - Highest Pension										
Cape Breton-Victoria	24	24	64	89	90	84	113	108	56	652
Strait	5	7	18	27	35	31	34	28	42	227
Chignecto-Central	8	18	39	36	40	64	68	57	56	386
Halifax	29	39	87	128	104	171	164	191	169	1,082
Annapolis	5	11	15	23	29	38	38	52	46	257
Southwest	5	10	24	34	36	64	50	51	51	325
Acadien provincial	2	2	8	10	17	10	10	17	9	85
Nova Scotia Total	78	111	255	347	351	462	477	504	429	3,014
SCENARIO C - Blend										
Cape Breton-Victoria	54	34	64	86	96	94	106	98	68	700
Strait	16	12	23	32	41	37	34	30	36	261
Chignecto-Central	28	25	39	48	54	74	73	75	70	486
Halifax	96	65	121	158	157	203	187	197	177	1,361
Annapolis	18	15	24	35	42	49	50	57	52	342
Southwest	18	17	26	42	44	64	58	60	58	387
Acadien provincial	3	3	7	10	15	14	12	17	12	93
Nova Scotia Total	233	171	304	411	449	535	520	534	473	3,630

F2

Table 3-A

Survey of School Board Human Resource Officials

Availability of Qualified Teachers to Fill Regular Teaching Vacancies, 2000-01

Summary Tabulation for Nova Scotia by Subject/Speciality

	Permanent Positions					Term Positions				
	Number Newly Hired		Difficulty** Finding Qualified Candidates (All Boards)			Number Newly Hired		Difficulty** Finding Qualified Candidates (All Boards)		
Subject/Specialty	Total	Qualified*	N	S	U	Total	Qualified*	N	S	U
SECONDARY	26	26	17	14	2	559	482	47	41	14
English First Language	0	0	1			38	34	6	1	
French First Language	4	4		1		56	55		3	1
French Second Language	2	2		3		56	53	1	5	
Other Languages	0	0	1			1	1	1	1	
Social Studies	0	0	1			35	32	6	1	
Mathematics	2	2	1	1		47	40	2	5	
Biology	1	1	2			9	8	4	1	
Physics	1	1		2		7	7	3	3	
Chemistry	2	2	2	1		7	6	2	2	
Other Sciences	0	0	1			20	13	4		
Physical Education	0	0	1			36	32	4	1	2
Fine Arts	1	1	1	1		54	49	1	2	2
Technology Education	2	2	1	1		31	22	1	2	1
Family Studies	0	0	2			20	16	3	1	1
Other Subjects	8	8	1		1	41	29	2	3	
Spec. Ed Resource	0	0		1		41	33	2	3	1
Spec. Ed. Speech Lang.	1	1		1		10	10			4
Spec. Ed. Psychologist	1	1		1	1	6	6		2	1
Spec. Ed. Other	0	0	1			31	25	3	2	1
Guidance	1	1	1	1		13	11	2	3	
ELEMENTARY	1	1	3			275	255	8	1	3
General	0	0	1			128	128	6		1
Other	1	1	2			147	127	2	1	2

* A qualified teacher would have an academic major or minor (or equivalent) in the subject/speciality area.

** Responses to 'Difficulty Finding Qualified Candidates' were: N - not difficult S - significant effort U - unable to find enough

Table 4-A

Survey of School Board Human Resource Officials

Availability of Qualified Teachers to Fill Regular Teaching Vacancies, 2000-01

Summary Tabulation for Nova Scotia by School Board

	Permanent Positions					Term Positions				
	Number Newly Hired		Difficulty** Finding Qualified* Candidates (All Boards)			Number Newly Hired		Difficulty** Finding Qualified* Candidates (All Boards)		
School Board	Total	Qualified*	N	S	U	Total	Qualified*	N	S	U
Nova Scotia			20	14	2			55	42	17
Elementary	1	1				275	255			
Secondary	26	26				559	482			
Cape Breton-Victoria			0	0	0			10	3	1
Elementary	0	0				7	7			
Secondary	0	0				19	19			
Strait			0	0	0			7	10	2
Elementary	0	0				16	16			
Secondary	0	0				67	57			
Chignecto-Central			2	9	1			10	7	1
Elementary	0	0				46	46			
Secondary	16	16				172	172			
Halifax			16	4	0			18	2	0
Elementary	0	0				86	86			
Secondary	0	0				121	121			
Annapolis Valley			0	0	0			5	10	5
Elementary	0	0				56	39			
Secondary	0	0				114	54			
Southwest			1	1	0			5	3	5
Elementary	0	0				10	9			
Secondary	2	2				25	19			
Acadien provincial			1	0	1			0	7	3
Elementary	1	1				54	52			
Secondary	8	8				41	40			

* *A qualified teacher would have an academic major or minor (or equivalent) in the subject/speciality area.*

** *Responses to "Difficulty Finding Qualified Candidates": N - not difficult S - significant effort U - unable to find enough*

Table 5-A

Survey of School Principals Availability of Substitute Teachers in 2000-01

Summary of Reasons for Increasing Difficulty in Finding Qualified Substitute Teachers and Other Comments

Nature of Comment	Content of Comment	Number	% of Survey Responses
Reason for difficulties in finding qualified substitute teachers:	Generally, fewer substitutes are available	89	28.3
	There are fewer BEd graduates	7	2.2
	Substitute teachers are harder to find as the year progresses	13	4.1
	Substitutes are being hired as:		
	permanent teachers	2	0.6
	long-term substitute or term teachers	51	16.2
	Potential substitute teachers are:		
	teaching outside of Nova Scotia	41	13.1
	working in other occupations	24	7.6
	in general, left the area or employed elsewhere	45	14.3
	The earnings or pay rate for substitute teaching are too low to make it worthwhile	44	14.0
	Retired teachers are limited in the number of days they can substitute	2	0.6
	Retired teachers are not interested in substitute teaching	1	0.3
School or location-related difficulties in finding substitute teachers	Generally, the school is located in a rural or isolated area, or the population base is too small	18	5.7
	It is too far or too costly for substitutes to travel to the school	31	9.9
	Substitute teachers do not want to work in a junior high school	3	1.0
	Substitutes do not want to work in school because it is 'inner city' or because of the students	3	1.0
Demand for substitute teachers is increasing	Generally, the demand for substitute teachers is increasing	18	5.7
	Regular teachers are absent more frequently due to illness or stress	19	6.1
	Provincial or system-wide professional development days are a significant problem	39	12.4
	More teachers are retiring	1	0.3
Difficulties with the process of finding substitute teachers	The substitute list is not up-to-date	6	1.9
	Morning calls are especially difficult	12	3.8
	Number of principals reporting number of calls needed to find a substitute teacher: Number of Calls Made: Maximum 150 Minimum 15 Average 49	28	8.9

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Table 5-A continued

Survey of School Principals Availability of Substitute Teachers in 2000-01

Summary of Reasons for Increasing Difficulty in Finding Qualified Substitute Teachers and Other Comments

Nature of Comment	Content of Comment	Number	% of Survey Responses % within Grade Level
Subject areas where it is especially difficult to obtain substitute teachers	Schools with only elementary grades: 198 responses		
	French (incl. immersion)	36	18.2
	Physical Education	28	14.1
	Music	23	11.2
	Art	8	4.0
	Specialty Areas	18	9.1
	Schools with secondary and consolidated grades: 116 Responses		
	French (incl. immersion)	17	14.7
	Physicial Education	5	4.3
	Music	16	13.8
	Art	1	0.9
	Math	6	5.2
	Physics	4	3.4
	Chemistry	3	2.6
	Technical Education	5	4.3
	Science	5	4.3
	Speciality Areas	2	1.7

Table 6-A

Substitute Teacher Utilization by School Board, 2000-01

	Cape Breton-Victoria	Strait	Chignecto-Central	Halifax	Annapolis Valley	Southwest	Acadien provincial	All School Boards*
Annual Utilization								
Total Substitute Teachers	464	217	524	763	391	328	150	2,837
Average Days Worked	52.3	54.8	55.2	82.6	44.8	49.0	30.7	60.5
Highest Month of Utilization								
Month	June	May	April	May	May	April	May	May
Number of Substitutes	est. 300	164	387	594	282	231	89	2,001
Average Days Worked	8.6	10.6	8.8	15.6	9.1	8.6	6.4	11.5
Lowest Month of Utilization								
Month	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.	Sept.
Number of Substitutes	107	83	295	441	187	165	53	1,331
Average Days Worked	4.1	4.2	5.6	8.8	5.4	5.1	6.6	6.4

Source: School Board Officials
** Substitute teachers who worked for more than one board are counted more than once, and includes substitutes who also worked as term or probationary/permanent teachers.*
est. Estimated on one and one-half months of data reported for June.

Appendix B

Summaries of Selected Articles Regarding the Current Labour Market for Teachers in Canada and Various Provinces

Canada

Canadian Teachers' Federation, Economic Service Bulletin: CTF *Survey of Canadian School Boards on Supply/Demand Issues* (October 2000)

In June and July 2000 the Canadian Teachers' Federation conducted a telephone survey of officials in a representative sample of (about) 215 school districts across Canada to determine labour market trends for teachers. The major findings of the survey follow:

Regarding full-time teaching positions ...

- Compared to four years ago, it is often harder to attract qualified candidates (51% of districts reported increasing difficulty). The most prevalent shortages were in the subjects of Science, Mathematics, Computer and Technology, Vocational Education, and Special Education; and in the fields of speech therapist and school principal.
- The majority of districts anticipate having difficulty attracting qualified candidates over the next five years, with 7 of 10 districts expressing concern to the year 2005.
- The factors most often identified by school districts as leading to a teacher shortage over the next five years were teacher retirements (78% of districts), increasing number of students with special needs (70%), fewer graduates from teacher education programs (58%), lack of interest in teaching as a career (42%), high turnover of beginning teachers (42%), experienced teachers leaving the profession (31%), and increased (local) student enrolment (26%).

In the 1999-00 school year, 29% of school districts experienced a great deal of difficulty meeting the demand for substitute teachers; 47% reported some difficulty.

British Columbia

Anne C. Schaefer, B.C. Teachers' Federation: *Teachers on Call in British Columbia: A BCTF Research Survey* (Spring 1999)

This report presents the tabulation and analysis of 2,467 responses to a mail-out survey in March 1999 to substitute teachers (referred to a "Teachers on Call" or TOCs) in British Columbia. The intent of the survey was to provide better understanding of the working conditions and issues of substitute teachers in the Province. While not commenting directly on the adequacy of the supply of substitute teachers, the survey does reveal aspects of their labour market conditions:

- The TOCs represent a large potential reserve of teachers who would be able to fill a (significant) number of contract positions for a reasonable period of time.
- The average earnings of TOCs in 1997-98 were $11,375, or about one-fifth of that for an average full-time teacher. On average TOCs had 73 days of teaching employment, and more than 60% wanted more work than they were currently getting.
- 70% of TOCs would prefer a "continuing," full-time teaching position, but apparently only about one-quarter would be willing to move to achieve this objective; one-eighth would be willing to move to another province and one-tenth to another country.
- Almost two-thirds of all TOCs believe that there are major obstacles to obtaining continuing or term teaching appointments. Further:
  " After being told that they could expect to work as a TOC for several years before having access to a continuing position, many TOCs now feel a sense of betrayal, saying that they have been stereotyped as "just a TOC," "written off," and "stale-dated,"..."

Newfoundland

David C. Dibbon, Ph.D., Assistant Professor in the Faculty of Education at Memorial University: *Teacher supply and demand: An analysis of current developments in Newfoundland and Labrador.* Prepared for the 2001 Pan-Canadian Research Education Program Symposium (on) Teacher and Educator Training: Current Trends and Future Orientations, Laval University (May 2001)

There is no overall teacher shortage in Newfoundland and Labrador. Further, due to a projected 36% decline in student enrolments between the years 1999-00 through 2009-10, a teacher shortage is not anticipated despite the large number of teachers who will be eligible for retirement. There is, however, concern for serious teacher shortages

in remote regions of the province and in certain subject and professional areas (i.e., mathematics, chemistry, physics, special education, French, administration, and guidance). There is a surplus, in particular, of newly-graduated teachers in the fields of primary/elementary education, social studies, and English.

The pool of substitute teachers has recently declined by 25%, causing substitute teacher staffing difficulties in 80% of rural and 65% urban schools.

Ontario

Working Group on Teacher Supply and Demand, reporting to the Ontario Minister of Education: *Ontario Teacher Supply and Demand* (April 2001)

The Working Group includes members from the Ministry of Education, Ontario College of Teachers, Ontario Teachers Pension Plan, school boards, and representatives of teacher training education, and representatives of professional organizations for teachers and school administrators in Ontario. Reflecting the diverse interests in the Group, the report provides two scenarios for the outlook of the labour market for Ontario teachers to the year 2009-10. Scenario A predicts that the supply of teachers will exceed demand in all but two years: 2001-02 with a deficit of 356 teachers, and 2005-06 with a deficit of 338. Scenario B foresees a shortfall in all years except 2003-04, when there should be a surplus of 23 teachers. Both scenarios agree that the demand for teachers will decline as the result of reduced enrolments. They also agree on the trend for the number of graduates from teacher training organizations, which will be 6,500 annually until 2005-06 after which it will decline to 5,000 per year. Provincial funding for teacher training institutions was increased to allow for a medium term expansion of teaching program graduates from 5,000 to 6,000 per year in the 2001-02 to 2004-05 period. The major demand differences in the scenarios occur in their assumptions on the number of additional teachers that will be needed to replace existing teachers who leave prior to retirement and who take parental leave. In terms of supply, the scenarios assume different levels for the number of former teachers who will be re-entering the profession. Although important to the outcome of the views on whether there will be a shortage of teachers, the differences between scenarios A and B are at the margin and open to conjecture.

There are reports of increasing difficulty by schools in engaging substitute teachers. The number of active substitute teachers in Ontario declined from 17,306 in 1998 to 15,711 in 1999, when an unusually high number of substitute teachers obtained full-time employment to fill a large number of positions vacated during a teacher early retirement program. To some extent, newly retired teachers were available to augment the substitute teacher workforce. Depending on the source of information, in the year 2000 , 70 to 85% of Ontario schools reported problems finding supply teachers. In the Toronto District School Board, 15% of the requests for supply teachers went unfilled in March 2001.

Quebec

Jean Claude Bousquet and Renaud Martel, Statistics and Quantitative Studies Branch, Quebec Ministry of Education: *Quebec's 1992 Teacher Training Program Reform: Assessing an attempt to regulate the supply of newly qualified teachers and to improve access to the profession.* Prepared for the 2001 Pan-Canadian Research Education Program Symposium (on) Teacher and Educator Training: Current Trends and Future Orientations, Laval University (May 2001)

Within the context of evaluating Quebec Government reforms, starting in 1992, to control the excess supply of teachers (i.e., by imposing quotas on enrolments in teacher training programs, and increasing new teacher qualifications), the labour market for teachers in Quebec has become healthier for new teachers, although there remains an oversupply in most disciplines. In the 1999-00 school year, there were 1.59 candidates for each vacant full-time teaching position, compared to 1.81 on average in the 1991-95 period.

Despite the reduced general oversupply of teachers in Quebec, the employment prospects and earnings potential for substitute teachers remains very low: 46% of all substitute teacher earnings are only 5% of that of a full-time teacher, another 39% of substitute teachers earn between 5% and 24% of a FTE. Many new teachers, most of whom start their careers as substitutes, leave the profession as a result of low earnings and of the uncertainty of obtaining a full-time position. "Indeed, how can we hope to attract good, qualified students and retain high-level qualified teachers if access to reasonable jobs resembles a lottery and requires putting in many years in truly precarious conditions?"

Raymond Ouellette, Direction des statistiques et des etudes quantitatives, Quebec Ministry of Education: *Projections of Teaching Staff in Quebec School Boards and Recruitment Requirements*. Prepared for the 2001 Pan-Canadian Research Education Program Symposium (on) Teacher and Educator Training: Current Trends and Future Orientations, Laval University (May 2001)

The demand for permanent and part-time (public and private school) teaching staff in Quebec is projected to increase slightly to the year 2001-02 (going from 79,764 in 1998-99 to 79,986 in 2001-02), thereafter the demand will decrease significantly to 69,009 in 2011-12, as a result of declining student enrolments. School board teacher recruitments, which reflect changing demand for teachers, retirements, etc, are expected to peak in 2001-02 at 4,254 then drop rapidly to reach a low-point of 1,830 in 2009-10.

Appendix C

Nova Scotia Teacher Demand and Supply Study School Board/District Questionnaire, June 2001

HR Director, Phone Number, School Board: _____

1. For the 2000-01 school year, indicate a response for each subject/specialty area in regard to the hiring of full-time and term teachers for secondary schools.

Subject/Specialty Area	How many teachers were newly hired?	How many newly hired teachers were qualified*?	How difficult was it to find enough qualified*candidates: N - Not difficult S - Significant effort U - Unable to find enough *Please circle letter response*
SECONDARY			
English First Language	Permanent: Term:	Permanent: Term:	N S U N S U
French First Language	Permanent: Term:	Permanent: Term:	N S U N S U
French Second Language	Permanent: Term:	Permanent: Term:	N S U N S U
Other Languages	Permanent: Term:	Permanent: Term:	N S U N S U
Social Studies	Permanent: Term:	Permanent: Term:	N S U N S U
Mathematics	Permanent: Term:	Permanent: Term:	N S U N S U
Biology	Permanent: Term:	Permanent: Term:	N S U N S U
Physics	Permanent: Term:	Permanent: Term:	N S U N S U
Chemistry	Permanent: Term:	Permanent: Term:	N S U N S U
Other Sciences	Permanent: Term:	Permanent: Term:	N S U N S U
Physical Education	Permanent: Term:	Permanent: Term:	N S U N S U
Fine Arts	Permanent: Term:	Permanent: Term:	N S U N S U
Technology Education	Permanent: Term:	Permanent: Term:	N S U N S U
Family Studies	Permanent: Term:	Permanent: Term:	N S U N S U
Other Subjects	Permanent: Term:	Permanent: Term:	N S U N S U

continued on next page

(continued) Subject/Specialty Area	How many teachers were newly hired?	How many newly hired teachers were qualified*?	How difficult was it to find enough qualified*candidates: N - Not difficult S - Significant effort U - Unable to find enough *Please circle letter response*
SECONDARY (continued)			
Special Education: Resource Teachers	Permanent: Term:	Permanent: Term:	N S U N S U
Special Education: Speech Language	Permanent: Term:	Permanent: Term:	N S U N S U
Special Education: Education Psychologists	Permanent: Term:	Permanent: Term:	N S U N S U
Special Education: Other	Permanent: Term:	Permanent: Term:	N S U N S U
Guidance	Permanent: Term:	Permanent: Term:	N S U N S U
ELEMENTARY			
General	Permanent: Term:	Permanent: Term:	N S U N S U
Other	Permanent: Term:	Permanent: Term:	N S U N S U

**Qualified refers to having an academic major or minor (or equivalent) in the subject area(s) to be taught.*

2. For those subject areas where finding qualified* teachers was a problem (S or U, above), what factors do you think may have made it difficult?

3. Over the **past two years**, has the ability of your school board to attract qualified* candidates to hire full-time and term teaching positions in secondary schools generally been:

   TERM: ___ easier ___ more difficult ___ about the same.
   FULL-TIME: ___ easier ___ more difficult ___ about the same.

4. Over the **next two years,** do you anticipate the ability of your school board to attract qualified* candidates to hire for full-time and term teaching positions in secondary schools will generally be:

   TERM: ___ easier ___ more difficult ___ about the same.
   FULL-TIME: ___ easier ___ more difficult ___ about the same.

5. Comments:

Upon completion of this survey, please return it in the self-addressed stamped envelope by July 31, 2001. Once again, thank you for participating in this survey. Your responses will be very helpful in our work to address the teacher demand and supply issues in Nova Scotia.

Appendix D

Nova Scotia Teacher Demand and Supply Study Principal Questionnaire, June 2001

Principal's Name, Phone Number, School and School Board:_____

1. In the 2000-01 school year, what was your school's experience in locating substitute teachers in each subject/specialty? Please check the appropriate box.

Subject/Specialty Area	Subject/specialty area **not** offered at this school	Subsititute teachers were not needed in Subject/specialty area	I could generally find qualified* substitute teachers in the following subject/specialty areas:		I could not often find qualified* substitute teachers in the following subject/specialty areas
			Without undue difficulty	Only after considerable effort	
SECONDARY					
English First Language					
French First Language					
French Second Language					
Other Languages					
Social Studies					
Mathematics					
Biology					
Physics					
Chemistry					
Other Sciences					
Physical Education					
Fine Arts					
Technology Education					
Family Studies					
Other Subjects					
ELEMENTARY					
General					
Other					

** A qualified teacher would have an academic major or minor (or equivalent) in the subject/speciality area.*

Nova Scotia Teacher Demand and Supply Study Principal Questionnaire (continued)

2A. Over the **past two years**, has the ability of your school to attract qualified* candidates for substitute teachers generally been:

___ easier ___ more difficult ___ about the same.

2B. If your school has experienced more difficulty, why has this occurred?

3. Comments:

A qualified teacher would have an academic major or minor (or equivalent) in the subject/speciality area.
Upon completion of this survey, please return it in the self-addressed stamped envelope by June 29, 2001. Once again, thank you for participating in this survey. Your responses will be very helpful in our work to address the teacher demand and supply issues in Nova Scotia.